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They were leaders in building the early foundation of modern programming and unveiled the structure of DNA Their work inspired environmental movements and led to the discovery of new genes They've gone to space and back taught us about the natural world dug up the earth and discovered the origins of our species They broke the sound barrier and gender barriers along the way The world of research wouldn't be the same without the pioneering efforts of famous research works made by these women Be inspired by these explorers and early adopters- the women in research who helped to shape our society We invite you to sit with their stories and enter new areas of understanding This list is by no means a complete record of women to whom we are indebted for their research work but here are of history's greatest research contributions made by...

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Research papers and articles

The Role of Education, Culture and Religion on Domestic Violence on Women in Nigeria

Chitu Womehoma Princewill

ABSTRACT

Background: Domestic violence on women is a public health concern of every country. The degree of violence varies from country to country. The consequences of domestic violence are enormous, and sometimes lead to death.

Objective: This study aims at understanding the role of education, religion, and culture in domestic violence in marital setting.

Method: Using qualitative data obtained December, 2014 to March, 2015, a semi-structured interview was used to conduct thirty-four in-depth interviews and six focus group discussions with educated, semi-educated, and uneducated Ikwerre women in monogamous or polygynous marriages.

Findings: From participants' responses, we observed that the Ikwerres have a patriarchal family culture that encourages domestic violence. It was also observed that the Christian religion advocates absolute submission of the woman to the man. Education was not seen to have much effect in curbing domestic violence.

Keywords: culture, domestic violence, education, nigeria, religion.

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Findings: From participants' responses, we observed that the Ikwerres have a patriarchal family culture that encourages domestic violence. It was also observed that the Christian religion advocates absolute submission of the woman to the man. Education was not seen to have much effect in curbing domestic violence.

Conclusion: Women's autonomy and personhood is eroded by culture and religion. Educating women alone will not help reduce domestic violence. Men also need to be educated. Culture that encourages domestic violence should be abolished. Religious leaders need to understand the negative effect of their teachings. Society needs to implement laws on domestic violence.

Keywords: culture, domestic violence, education, nigeria, religion.

I. INTRODUCTION

Over the years domestic violence on women has become a public health issue (Gomes *et al,* 2015). Although domestic violence is a global issue, the degree varies from country to country and from culture to culture with the developing countries being the most affected (Awusi *et al*, 2019; Sukeri & Normanieza, 2017). In Nigeria, domestic violence, have steadily increased and there is an urgent need to address it (Amole *et al*, 2016; Oluremi, 2015).

Domestic violence against women has been defined as "physical, sexual and psychological violence occurring in the family, including, battering, sexual abuse of female and children in the household, dowry related violence, marital rape, female genital mutilation, killing of spouse, and other traditional practices harmful to women" (Garcia-Mereno et al, 2006; Oluremi, 2015; WHO 2013; WHO, 2021). Study on domestic violence by WHO found that women who are abused by their intimate partners rather than by strangers have 50-70% gynaecological, and central nervous system related issues, among others (Campbell *et al*, 2002; Noughani & Mohtashami, 2011). The significance of such study brings to light how the violence that takes place in the least expected places are often not given enough attention. Society hardly takes note of these women who are most harmed when setting up a protective system.

Researchers have identified certain demographic factors like young marital age, low educational status, alcohol, drugs, gender of children, extended family, and women's financial dependence as responsible for domestic violence (Adjah & Agbemafle, 2016; Gage and Thomas, 2017). Women who marry at a young age, women who do not have the required number of male children, women who are financially dependent on their husbands and who are not educated, as well as women from poor backgrounds have a high risk of suffering domestic violence (Adjah & Agbemafle, 2016). On the other hand, educated

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women, women who are financially dependent, have male children, and are of high socioeconomic status are less likely to suffer domestic violence, although not totally ruled out because in their bid to remain married, escape being stigmatized for being single, separated or divorced, these women endure all sort of violence in the family (Lasong *et al,* 2020; Oluremi, 2015). Some researchers have also observed in their findings that domestic violence affects women of all races, irrespective of economic and educational status (Arisi & Oromareghake, 2011; Noughami & Mohtashami, 2011). They observe that cultural practices not only fuel domestic violence, they also erode women's autonomy and personhood. Their findings show that education has no effect on domestic violence (Arisi & Oromareghake, 2011; Noughami & Mohtashami, 2011).

Studies also show how women's health is adversely affected, as well as those of their children, ranging from emotional to psychological trauma (Al-Tawil et al, 2012: Igbolekwu et al, 2021). Women suffer all sorts of abuse in their homes; rape, emotional and psychological abuse, physical violence and sometimes death, sexual violence, honour killing, dowry related abuse like in India (Andarge & Shiferaw, 2018; Chhabra, 2018; Igbolekwu et al, 2021; Oluremi, 2015). Although both genders suffer domestic violence, the vast majority are women (Bakara et al, 2010; Duran & Eraslam, 2019). In societies that are patriarchal in structure, most women are forced to hide the domestic violence they suffer in order to remain married and escape victimization from the family and the society because divorce, separation and being single is frowned upon in the family and in the society (Al-Tawil et al, 2012; Igbolekwu et al, 2021).

Naturally, no man is born with the traits of being violent to women but men acquire this attitude through socialization (Hayati et al, 2014). Generally, men's adherence to sexist, patriarchal, alcohol, religion, and culture of disrespect for women have contributed to domestic violence (Hayati *et al,* 2014). Some researchers have linked the fact that men are trained to exhibit masculinity in their homes, to exert authority, and be in control of their homes. This training of

masculinity to some extent is one of the reasons for domestic violence (Duran & Eraslam, 2019). Also, male domination in economic matters and in decision making in the family is one high factor that promotes domestic violence in the family. Masculinity predisposes men to the concept of man's perception of a set of characteristics he ought to have, an expectation of how a man should behave in a given culture and as it relates to a given situation (Hayati *et al,* 2014, Duran & Eraslam, 2019). Domestic violence does not only erode the autonomy of women, it also prevents them from achieving their God given potentials (Ferrari *et al*, 2016). Increase in domestic violence is greatly affecting the productivity of women (Benebo *et al*, 2014). A career woman who is constantly abused at home cannot be productive at her place of work because of exhaustion, fear, mental and emotional trauma. (Benebo *et al*, 2014).

Domestic violence is not limited only to women in the family; children are also affected by it, and this impacts negatively on them (Harper et al, 2018; Igbolekwu et al, 2021). Domestic violence affects children's education, their overall wellbeing and it also has long-term developmental consequences (Benebo *et al*, 2014, Adjah & Agbemafle, 2016, Andarge & Shiferaw, 2018). Indirect abuse occurs as a result of children witnessing inter-parental violence and hearing what their mothers go through in the hands of their fathers (Kocacik & Dogan, 2006). Some researchers observed that witnessing domestic violence in childhood often turns the child into a violent person from a victim to a perpetrator, thereby continuing the circle of domestic violence (Adjah & Agbemafle, 2016; Benebo et al. 2014: Lloyd, 2018; Kocacik & Dogan, 2006). Given the enormous negative impact of domestic violence on women, and children, if domestic violence must be tackled effectively, it must be treated as an issue of public health crisis because it is the family that translates and collectively becomes the society. Domestic violence has a ripple effect which can permanently affect the family and society. Coincidentally some critical influencers of society like education, culture, and religion are key predisposing factors to domestic violence.

1.1 Education

Education is defined as a continuous process of learning where individuals or a people acquire knowledge by interacting with one another and by moving from place to place. Education is of two types, formal and informal education. In formal education, learning is done in schools with teachers and students, while informal education learning is done by interacting with people, and by travelling (Harper *et al,* 2018). Education is a great enabler of empowerment. It is an important tool necessary for bringing people and countries together, as well as improving lives and societies for the purposes of development (Jejeebhoy, 1996). Unfortunately, low income countries do not have the adequate resources and infrastructures needed for every citizen to attain educational status. Given the inherently patriarchal system in the world, especially in developing countries, male children are generally preferred over female children (Adjiwanou & LeGrand, 2014; Alabi et al, 2014; Enaibe, 2012; Nsirim-Worlu, 2011). Thus, having deprived the female child of an education and giving her out in marriage at what is deemed an early age to be married, she is literally like one who is defenceless and has to fight off attacks (Nsirim-Worlu, 2011; Jegede & Odumosu, 2003; Sarah, 2016).

1.2 Culture

The culture of absolute respect for men has greatly increased domestic violence (Bakara et al, 2010: Princewill et al, 2019). The Ikwerre culture of the Rivers people of Nigeria, West Africa, advocates that women must be totally submissive to men and therefore succumb to their authority (Okemini & Adekola, 2012; Princewill et al, 2019). This submission is even more when the woman is married. The culture of bride price payment in Nigeria automatically transfers the rights of a woman to her husband; hence married women in the Ikwerre culture are seen as the property of their husbands.

The feeling of being someone's property without having rights to one's self affects the woman psychologically and emotionally (Bakere et al, 2010, Princewill et al, 2017). Ironically, older women who should change the narrative, given what they have gone through in the past, help to enforce this patriarchal culture of absolute respect for men (Princewill et al, 2019). A woman who complains about domestic abuse from her husband is viewed as a difficult and disobedient woman who was not well trained by her mother. Therefore, in order to remain married, so as not to put her family to shame, a woman endures all sorts of domestic abuse, even if it leads to her death. The Ikwerre culture will prefer the death of a daughter in her husband's house rather than being divorced or separated. The Ikwerre marriage culture mirrors the situation with most other tribes in Nigeria. The situation is even worse in the northern part of the country where polygyny is still very much in vogue and the marriage of underage girls permissible (Bakara et al, 2010; Nsirim-Worlu, 2011). In most African cultures, women do not have the right to speak without the permission of their husbands (Aniaka, 2013; Kingah & Knigah, 2010). They are to be seen and not heard. Nigerian culture is characterised by patriarchy and well established discriminatory male centered culture (Princewill et al, 2017). The upbringing of boys and girls is very discriminatory to the disadvantages of the girl child; unequal gender power relationship which favours the boy in a patriarchal society exposes adolescent girls to forced early marriage and this impact negatively on the girls (Kingah & Kingah, 2010; Nsirim-Worlu, 2011). These young girls in marriage become vulnerable to domestic violence due to the huge age gap between them and their husbands.

1.3 Religion

The Christian faith posits that in the eyes of God, men and women are equal (Bakara et al, 2010; Igbolekwu et al, 2021). This belief is derived from the Biblical injunctions that;

"All baptized in Christ, you have all clothed yourselves in Christ and there are no more distinctions between Jew and Greek, slave and free, male and female, but all of you are one in Christ Jesus" Gal. 3:28.

"And you are all brothers and sisters" Matt. 23:8.

This belief of equality is further strengthened by the doctrine of faith as espoused in The Vatican II where it is pronounced that "Since all men possess a rational soul and are created in God's likeness, since they have the same nature and origin, have been redeemed by Christ and enjoy the same divine calling and destiny, the basic equality of all must receive increasingly greater recognition. True, all men are not alike from the point of view of varying physical power, biological make up, and the diversity of intellectual and moral resources. Nevertheless, with respect to the fundamental rights of the person, every type of discrimination, whether social or cultural, whether based on sex, race, colour, social condition, language or religion, is to be overcome and eradicated as contrary to God's intent. For in truth, it must still be regretted that fundamental personal rights are still not being universally honoured. Such is the case of a woman who is denied the right to choose a husband freely, to embrace a state of life or to acquire an education or cultural benefits equal to those recognized for men" (Pope Paul VI, 1965).

These doctrinal positions are far from reality as the theme of the woman remains disputed in contemporary theological and social debate. The sacred writings of the two Abrahamic faiths (Christianity and Islam) have been interpreted in ways that support patriarchal social relations (Bakara et al, 2010; Onoh et al, 2013). There are two versions of the story of creation according to the Christian Holy Bible as captured at the beginning of the book of Genesis. According to the scriptures, in Genesis 1:27 "So God created man in his own image, in the image of God he created him; male and female created he them". This account of creation supports the equality of man and woman before God.

The second version of creation as reported in Genesis 2 surmise that Adam was made from 'the dust of the ground' when God breathed life into him and that Eve was created out of one of Adam's ribs to provide company and help for Adam. See Genesis 2:22, "And the rib, which the Lord God had taken from man, made He a woman, and brought her unto the man,"

Some Christians see these two versions of story to be contradictory, some people think that the story goes on to give more detail about the creation of humans seen as two individuals; Adam and Eve. Preachers rely on the second version to circumvent the equality of sexes and provide the foundation for discrimination and segregation against women.

Deeply etched within the Bible text are several other scriptural verses that seem to support and promote patriarchy and subjugation of women especially as wives. These verses are routinely recited at Christian teachings, catechism and accepted as church dogma (Nsirim-Worlu, 2011). They are frequently referenced at Christian worships and preaching especially during solemnization of marriages. A few of such examples will suffice (quotations are taken from the New International Version Bible);

1st Corinthians 11 Verse 8-9 "For the man is not of the woman, but the woman for the man. Neither was the man created for the woman."

Verse 13- 16 "But I would have you know that the head of every man is Christ; and the head of the woman is the man; and the head of Christ is God."

Ephesian 5 vs 22-24 [22] "Wives, submit yourselves to your own husbands as you do to the Lord. [23] For the husband is the head of the wife as Christ is the head of the church, his body, of which he is the Saviour. [24] Now as the church submits to Christ, so also wives should submit to their husbands in everything."

Colossian 3 vs 18 "Wives, submit yourselves to your husbands, as is fitting in the Lord."

1 Peter 3 vs 1-6 "Wives, in the same way submit yourselves to your own husbands so that, if any of them do not believe the word, they may be won over without words by the behavior of their wives, [2] when they see the purity and reverence of your lives. [3] Your beauty should not come from outward adornment, such as elaborate hairstyles and the wearing of gold jewelry or fine clothes. [4] Rather, it should be that of your inner self, the unfading beauty of a gentle and quiet spirit, which is of great worth in God's sight. [5] For this is the way the

holy women of the past who put their hope in God used to adorn themselves. They submitted themselves to their own husbands, [6] like Sarah, who obeyed Abraham and called him her lord. You are her daughters if you do what is right and do not give way to fear."

Some of the scriptural verses even admonish women to be silent in public places or in churches except they seek permission from their husbands. It is in fact not only seen as shameful for a woman to speak in public without the permission of her husband but as an insult to the man. See the following texts;

1st Timothy 2 11-15 [11]"A woman should learn in quietness and full submission. [12] I do not permit a woman to teach or to assume authority over a man; she must be quiet. [13] For Adam was formed first, then Eve. [14] And Adam was not the one deceived; it was the woman who was deceived and became a sinner. [15] But women will be saved through childbearing—if they continue in faith, love and holiness with propriety."

1 Corinthian 14 vs 34 & 35 "[34] Women should remain silent in the churches. They are not allowed to speak, but must be in submission, as the law says. [35] If they want to inquire about something, they should ask their own husbands at home; for it is disgraceful for a woman to speak in the church."

It is apparent that these thoughts of female subjugation are mere opinions of Apostle Peter and Paul as there were no indications that they were under divine guidance when they made these declarations. It is noteworthy that apart from one citation credited to Peter, all others are from the letter of St Paul. While Peter had a wife, the Bible never says whether Paul was married or not. It is however believed that Paul is not married given he declared that he had the gift of celibacy in 1 Corinthians 7:1-7. It is amazing how Paul who supposedly was never married could have such resentment for women. All the books written by him clearly enforce women subjugation and discrimination. The apostles clearly said that women should submit completely to their husbands in all things, including what and when to speak.

Even in African Traditional Religion, women are subordinate to men in both public and family life. Could Karl Marx be correct to say that society cannot be better when religion still exists (Karl Marx on Religion: How Religion Affects Social Inequality)? This statement appears to be true in today's world because the whole world appears to be patriarchal and deeply rooted in religion and religious books. Patriarchy is one of the serious problems of most societies where women are constantly subjugated and abused. We have in Nigeria, a society that protects rapists and battering of both women and the girl-child even with all the laws against these actions.

This article aims to highlight the role of education, culture, and religion on domestic violence on women in Nigeria.

1.4 Effect of Domestic Violence on Women's Health

It has been observed that women who have experienced domestic violence suffer from chronic health problems such as chronic back pain, memory loss, chronic pelvic pain, abdominal pain, irritable bowel syndrome, and gastrointestinal disorder (Chhabra, 2018; Garcia-Mereno et al, 2006¸Onoh et al, 2013). Previous studies have shown that women who suffer or have suffered domestic violence are more likely to experience vagina infection, Vescovaginal fistula (VVF), urinary tract infection, as well as sexually transmitted diseases (STDs) and HIV/AIDS due to rape, sexual abuse, and child delivery when their pelvis are not fully developed (Benebo et al, 2018; Duran & Eraslam, 2019; Gattegno et al, 2016; Pun et al, 2018).

Maternal and child mortality and morbidity are also more experienced by women who suffer or have suffered domestic violence because of lack of adequate health care services (Adjiwanou & LeGrand, 2014; Andarage & Shiferaw, 2018; Campbell et al, 2002). Several studies have linked domestic violence during pregnancy to low maternal weight, miscarriage, still birth, as well as low infant birth weight. Women who suffer

domestic violence are at a greater risk of suffering from adverse mental health issues such as depression, suicide attempts, and post-traumatic stress disorder (Chhabra, 2018; Dienye et al, 2014; Duran & Eraslam, 2019; Ferrari et al, 2016; Gomes et al, 2015; Souto et al, 2015).

Girls who are raped are forced to have their dreams and careers aborted due to unwanted pregnancy (Folayan et al, 2014). Such girls often suffer from depression, low self-esteem, lack access to adequate health care, as well as lose the opportunity to live a meaningful live and contribute their quota to the society (Adjah & Agbemafle, 2016; Al-Tawail, 2012; Duran & Eraslam, 2019; Folayan et al, 2014; Orisaremi & Alubo, 2012; Pun, 2018).

II.   ETHICAL CONSIDERATION

The study was certified by the Ethik Kommission Nordwest-und Zentralschweiz (EKNZ) of Basel and approved by the UI/UCH Ethics Committee of Nigeria.

III.   METHODOLOGY

3.1 Study Site

The study site was Rivers State, Nigeria. This was where the data collection was done. Rivers State is home to Ikwerre people as well as Okirika, Kalabari, Ogoni, Etche, Bonny, Eleme, and Opopo tribes. Rivers State is one of the 36 states of Nigeria and has a population of about five million people (National Population Commission, 2010).

The Ikwerre people occupy four out of the 23 local government areas of Rivers State. These Local Government Areas are Port Harcourt Local Government Area (PHALGA), Obio/Akpor Local Government Area (OBALGA), Ikwerre Local Government Area (KELGA), and Emuoha Local Government Area (EMOLGA) (Imaa, 2004; Okemini & Adekola, 2012). In time past the Ikwerres were ancestral worshippers but this is gradually being replaced by Christianity and other religions, although there are still some traditional worshippers (Okemini & Adekola, 2012). Polygyny is still widely practiced in the Ikwerre culture. The pattern of living is a communitarian type with patrilocal mode of residence. The Ikwerre people speak the Ikwerre language, English, and Pidgin English *(Pidgin English is an adapted version of the English Language)*. The Ikwerres are also well educated.

3.2 Participants

To recruit participants, we had to first speak with the women community leaders in all the four local government areas so they could help contact study participants for our study. The reason for this was because the women in the community only listen to their women community leaders. The women community leaders mobilized for possible participation a total number of 90 women who were between the ages of 22 and 60 years, who spoke Ikwerre, Pidgin or English language, and were all Christians. The full names, addresses and phone numbers of the 90 women were supplied by the women community leaders who contacted them.

We reached out to all the 90 women either by phone call or visit to their houses or offices and explained the aims and details of the study to them. We assured them that their confidentiality will be maintained at all times during and after the study. We also made them realize that their participation was completely voluntary and that they were at liberty to withhold their consent if they were not willing to participate in the study or withdraw at any time in the course of the study without consequences.

Some declined to participate in the study for various reasons ranging from not being comfortable with the study to family bereavement. A few others declined with no reason. In a few instances where two or more women were married to the same man, only one volunteer was retained and the rest excluded to maintain confidentiality, allow for freedom to volunteer information, and avoid conflicts that may arise from matters incidental to volunteered information.

After eliminating those who declined and those excluded, we were left with 57 women who participated voluntarily in the study. They were grouped according to their educational status,

(educated, semi-educated or uneducated). The education referred to here is formal education. Educated group comprises of women who have attained education up to tertiary level. Semi-educated women are women who have attained education up to primary or secondary school, and the uneducated women are women who have never attended school.

Informed consent forms were given to the 57 women participants after once again explaining the purpose of the study and the essence of completing the informed consent form to them. They were allowed to go home with the informed consent form for a week so as to have enough time to study them and if possible, seek clarification from family members. Women who could not read said they had relatives who would read and explain the documents to them.

At the end of the one week, a meeting was held with the various participants at the date, venue, and time chosen by them. We went over the informed consent document with each participant to be reassured that they understood the document, the reason for the study, and to confirm that they were still willing to participate in the study. Signed or thumb printed informed consent documents were received from all participants. They also had a copy of the informed consent documents for their records. Afterwards, a time, venue, and date as they wanted were set for the interview/discussion.

3.3 Participants' characteristics

Thirty-four women enrolled in the in-depth interviews (IDIs), 28 women enrolled in the six focus group discussions (FGDs), and five women agreed to enroll in both IDI and FGD. On the whole, data was provided from a total of 57 married women. The study's response rate was 63 percent. More than half of the participants (n = 27) were educated and most of the participants (n = 38) were in monogamous marriages.

3.4 Study Design

Focal Group Discussions (FGD) and In-depth Interviews (IDI) which are types of qualitative research tools were used. Women were allowed to choose which group they would want to join, whether FGD, IDI or both. Qualitative method was chosen because it enables participants to discuss in depth their experiences as it relates to the study.

Semi structured interview questions were made for both IDI and FGD but were a bit adjusted to fit either the IDI or the FGD. Semi structured questions were used to give room to participants to talk freely. Before the actual interviews/ discussions, pilot questions were developed to test the sensitivity and acceptability of the research questions to participants. After the pilot interviews, the interview questions were then restructured so that participants can be free to speak without holding back. Prompts were sometimes asked to encourage more responses from participants and to further understand participant's responses. Although the semi structured research questions were centered on women's autonomy and reproductive rights, salient responses on the role of education, culture, religion, and domestic violence were noted.

3.5 Data Collection

Data was collected from December 2014 to March 2015. Twenty-three (23) IDIs and six (6) FGDs were conducted. The FGDs consisted of four to five women in each group. The FGDs included (1) educated women in polygynous and monogamous marriages, (2) uneducated/semi-educated women in monogamous and polygynous marriages, (3) uneducated/ semi-educated women in monogamous marriages, (4) uneducated women in polygynous marriages, (5) uneducated women in polygynous and monogamous marriages, and (6) educated women in monogamous marriages. IDIs and FGDs were conducted at venues, dates, and times chosen by participants to ensure privacy and confidentiality, and in the absence of family members. IDIs lasted for approximately 40–60 min, while FGDs lasted for approximately 55–90 min. All interviews and FGDs were audio-taped with prior permission from participants and extensive notes were taken. The FGDs helped us to capture collective views of the women and salient issues which we captured by

observing their facial expressions and body language that occurred during participants' interviews. The IDIs enabled us to understand in depth the experiences of each participant. With IDI, the participants were able to discuss issues that ordinarily they could not discuss during the FGDs. IDI also gave the women privacy and increased trust and confidentiality.

3.6 Data Analysis

Audio tapes of all interviews and group discussions were carefully listened to. Afterwards, the audio tapes were then transcribed. Notes which were taken were thoroughly read through and observations of body language and facial expressions were expanded and added to the transcribed audio tapes. Audio taped Interviews in Pidgin English were first translated to English language before transcribing. In the findings and quotations from women, pseudonyms were given to IDI participants while participants in FGD were described based on their age, education, status and type of marriage. All IDI and FGD transcripts were thoroughly read several times. Open axial coding technique was used with the help of MAXQDA Version II (Verbi GMBH, Berlin Germany). Coding relating to the role of education, culture, religion, and domestic violence were sorted and categorized. All codes were reviewed and discussed at length until saturation was reached when new issues did not emerge. This process of coding resulted in two main themes: 1. Domestic violence in the home, and factors that promote domestic violence.

IV. RESULTS

4.1 Domestic Violence

As we already stated, domestic violence could be of different forms, ranging from emotional to psychological. Nearly all participants have experienced domestic violence in one form or the other. An educated woman explained that the emotional trauma she experiences is worse than physical abuse. She explained that the emotional abuse she experiences in marriage gives her palpitation and severe headache:

> My husband married another wife because he said he didn't pay my bride price; his mother

paid my bride price for him, and so he does not recognize me as his wife, even though I have children for him. My children and I have been relegated to the background. I am now solely responsible for myself and my children. I am suffering a lot of health challenges because of this treatment I get every time in my husband's house. He constantly reminds me that he did not pay my bride price and so does not feel responsible for my children and I. My heart feels like it is tearing and I always have headache (Nirvana, 35-year-old uneducated woman, polygynous marriage during IDI)

Another woman in FGD 5 showed us her distorted left ear and mouth with missing teeth due to constant battering from her husband.

> Look at my ear, see my mouth, I have lost nearly all my teeth due to the beating I get from my husband. He also beats my children the same way. Oftentimes, my children, especially my sons sleep outside the house to avoid their father. If I go back to my people, they will tell me to go and be a good wife to my husband (40 year old uneducated woman in polygamous marriage, FGD 5.

4.2 Effect of Education on Domestic Violence

Responses from women suggested that education plays a very important role in curbing domestic violence, although it does not eliminate it completely. Some educated women said that they prefer to remain married than report their husband's domestic violence on them. For them, in order to be respected by the family and the society, they will prefer to endure domestic violence than break up with their husbands.

> My husband told me not to work so that I can adequately take care of our children since he is hardly in the house. That is why I am a full-time housewife despite my education. This has made me completely dependent on him for my well being and that of our children. So, I have to do all that he requires me to do since I depend on him financially. Disobeying him will spell doom for my

children and me (Victoria, a 37-year-old educated woman in monogamous marriage during FGD 1)

Another educated woman said

My husband and I are both educated but he listens to his family a lot. To prove to them that he is in control he does things he should not do. I am also a very strong-willed person, so he will not dare lift his finger at me. He wanted me to keep having children even at the detriment of my health after two children; I refused and went for family planning. From then on, he started marrying more wives. Now he has three wives and we just live as strangers in the house (Monica, a 50-year-old educated woman in polygamous marriage)

4.3 Effect of Culture on Domestic Violence

All the women responded that the Ikwerre patriarchal society and culture is largely responsible for domestic violence. The culture allows beating of the wife if she is stubborn and does not respect her husband. Participants said that the Ikwerre culture of absolute respect for men is detrimental to the women. They responded that another culture of the Ikwerre people of preferring and treating the male child specially also promotes domestic violence.

"I got married to my husband because my father said there was no need to send girls to school. My father said, women once married are no longer relevant to their families but to their husband's family. So I got married at a young age, not knowing what I wanted, and I regret every bit of it" (Oprah, a 28-year-old semi-educated woman in polygynous marriage, during IDI).

Another participant said that the Ikwerre culture demands that women must not deny their husbands sex because it is one of the marital obligations of a wife to the husband. For this reason, rape is not recognized in marriage and it is not seen as a crime, "For me not to give in to my husband's sexual demands means that I want to die that day, because he will beat me thoroughly for refusing him sex. Not only that, there will be no feeding money for my children and I. So rather than not having food to feed myself and my

children, I will submit myself to him." (38 years old, uneducated woman, monogamous marriage, FGD 4)

4.4 Effect of Religion on Domestic Violence

Participants responded that the Christian religion to which they belong helped to enforce domestic violence by their teachings. All the participants said that during church weddings and sometimes even at normal church services, preachers tell wives to be submissive to their husbands in all things because the husband is the head of the home. They also say that they are told in church that a woman is not supposed to speak without the husband's permission. The preachers often tell them that divorce is not allowed and so they should pray for God to change their abusive husbands. Participants said that some wives have died trying to be good wives by tolerating all forms of abuse from their husbands.

V. STUDY LIMITATION

Our sample size was small and may not have been adequate for generalizable knowledge. But given that we spoke to women who are from different local government areas that are not close to each other and participants were interviewed differently, yet responses were similar suggesting that even with larger sample size, the findings would not have been much different. Another limitation could be because we conducted our study with only married women. But then, our goal was to study women who are married, and so we feel we have captured the purpose of the study. Finally, maybe because this article emanated from a larger study which was on the reproductive autonomy of the Ikwerre women, it is possible that participants did not speak in detail on the role of education, culture and religion on domestic violence.

VI. DISCUSSION

Although the data collection for this study was done in 2015, nothing seems to have changed over the years. Rather, there is an upsurge of domestic violence in Nigeria. Cases of domestic violence are reported daily in both the electronic and print

media. Cover page of The Guardian of 22nd February, 2020 reported an increase in domestic violence, as well as spousal killing. It also reported that women are now taking laws into their hands by killing intimate partners who abuse them. Also, The Vanguard newspaper of 2nd September, 2021 reported that there is a steady increase in domestic violence. It stated that Lagos State alone recorded a total number of 10,007 reported cases of domestic violence from May, 2019 to 26th August, 2021. Usher et al (2020) observed an increase in domestic violence during the Covid 19 global lockdown.

This article aims to highlight the role of education, culture, and religion on domestic violence on women in Nigeria. The findings of this research will add to existing literature reviews on domestic violence. Violence against women violates women's fundamental rights and freedom. Factors associated with domestic violence such as education, culture and religion were observed in our study. We observe that domestic violence was not really reported as they occur. In the Ikwerre culture, according to responses of participants, it was realised that women suffer both emotional and physical abuse as well as rape which is normal in Ikwerre marital setting. It was also observed that although education helps to curb domestic violence, it does not totally prevent domestic violence in the family. The show of male masculinity, culture, poverty, lack of education, and religion promote domestic violence. The exposure of women to domestic violence has adverse health effects and prevents women from reaching their full potential. Responses from the study participants', show that the culture of absolute respect for men in the Ikwerre society erodes married women's autonomy and personhood.

6.1 Culture

It is usually misconstrued that natural scientific and technological advancements have taken place in isolation or without synergy from the humanities. Most developing countries continue to hold on to their cultural beliefs of the female subjugation, and this could be both the causes and consequences of the poor interrogation of the

inherent and implied concepts of humanity and personhood in relation to their needs of freedom and equality or lack of it, in inherited practices within the current changed world of reality, priority, and existence. Beyond the economic, political, developmental, and masculine power play, tightly holding to outmoded and arguably disadvantageous culture, notions, and practices, from the viewpoints of ethics, much of the described practices both within and without, but especially within marriage settings constitute outright sub-humanization, dehumanization, de-personalization of the female sex. These are some of the bases for marital subjugation rather than conjugation, which could have no ethical justification because of the truth, propriety, and natural justice that they oppose. This raises the issue of education.

6.2 Education

The issue of culture raises the issue of education. This study also suggests that schooling has not necessarily achieved its aims of education in the context of its goals of humanization in the twenty-first century, at least, as far as the conception and engagement of the female sex is concerned in the said situation in which, like as reported from many other cultures of the developing world, the investigated unethical practices are considered 'cultural'. Since education is the societal instrument of purifying, enlarging, and enriching inherited worldviews, values, and practices so that advancement is transferred to the coming generation. Educational practices that radically fail in these very fundamental areas of human self-conception can hardly be said to be fulfilling its promises or to be ethical as such. This is more so when the state has signed agreements and treaties based on such understandings without efforts to communicate them to trusting, dependent succeeding generations. We are describing an aspect of sexism which is evidently not less traumatic than racism or colourism! The lens of bioethics through which we seek to interrogate such sub-humanising, subjugating and dehumanizing practices, itself is a product of centuries of insights garnered from several fields of disciplines. Developing countries can benefit from

the Belmont principles of autonomy, beneficence, non-maleficence, and justice by adopting and adapting purified insights and engaging them in the curricula and management of their educational enterprise.

6.3 On prevalence

It is not surprising that whatever is supported by culture has undue myopic advantages to almost a half of the world population, and will be sustained and widespread. Literature beyond the scope of this work confirms the widespread and even global nature of this human malfunction. Also implied are its grave economic costs to states resulting from its well documented resultant physical (such as bruises, abrasions, contusions, lacerations to various body parts and organs), biological (such as hormonal irregularities), psychological, educational, economic, ideological, and spiritual (at least as a sense of grounding and belonging in being, in the universe) traumata. Like mechanical trauma, this less conspicuous devastation by relative stealth appears to us to be deserving of Public Health attention, because its cause is widespread and spreads through defective conception-emotion-volition transfers to those around especially the vulnerable ones in the contexts of impunity or even apparent gain or applause. Appropriate personhood, human rights, intrapersonal, and family education at all levels, in a formal and not by passive hap-hazard forms need to be encouraged. Current family counselling like sex or sexuality-counselling will be more effective and efficient in the context of previous education. Genotype counselling is widespread but emotional profiles with their predispositions ought to be identified and widespread for purposes of treatment and prevention of complications. Mental health aspects of Public Health efforts need reinforcement especially concerning this grave issue which tends to actualize in settings of relative acratia, low emotional currency, intelligence, and skills. We dare say that the increasing technological interphases and increasing instability and stress in the world suggest a genuine need for clinical sociology, caring for groups and couples-in community/society, beyond policy advocacy.

6.4 Religion

From the study and participants' responses, we note that religion has proved to be detrimental to women. It is amazing how Apostle Paul says in 1Timothy 2, 11-15 that the woman was the one deceived and became a sinner and not the man. He went further to say that the woman will be saved through childbearing which is even not a guarantee, because according to him, the woman will only be saved if she continues in faith and holiness with propriety. Rather than preach equality before God, preachers dwell on the teachings of Apostle Paul, Peter and other male writers in the Bible to subjugate women and promote women subordination. Religious leaders prefer to twist the Bible to soothe the male gender. Unfortunately, even the female religious leaders who should change the narrative also help to preach and enforce female subjugation and subordination.

VII.   CONCLUSION

Cultures and practices which promote domestic violence and female subordination should either be abolished or modified to accommodate both genders. Religious leaders should preach love and equality for every human being instead of preaching what will give men the right to abuse women. Abused women often live in fear, shame, resentment, anger, timidity, and isolated from family and friends because they want to hide the situation they are in, so as to protect their abusers. At some point, the abused begin to make excuses for the abuser, while hoping and praying that the abuser would change.

It is clear that not much has changed on the effect of domestic violence on women since researchers started working in this area till date. Enacting laws and Bills to fight against domestic violence will be a fight in futility if there is no serious change of mind set on how men and the society view women and how women perceive themselves. Respect for both genders must be taught from the homes and schools. Until domestic violence is treated as a public health concern, social menace and the increase in mental

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health cases in the society, (especially in developing countries) will continue.

RECOMMENDATION

The Nigerian governments and policy makers should ensure that existing laws which protect women from domestic violence are not only enacted but implemented and enforced.

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Conflict of interest

The author report there are no competing interests to declare.

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Mapudungun, Interculturality and Inclusiveness in the Chilean Educational System

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RESUME

Mapudungun is one of the heritages that defines the identity of the Mapuche people. Their survival over time is mainly due to the re- ethnification processes that have occurred in the last decade. However, it is necessary to follow the strategies briefly developed in this work, in order to maintain its validity and revitalization in the Chilean sociocultural context. A maintenance program for this indigenous language must have the proper state support to become a healthy and self-sufficient language. All this will allow the continuation of the way of life of its users, as well as the faithful reflection of their culture within the multicultural world.

Keywords: mapudungum, identity, interculturality.

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RESUME

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I. INTRODUCTION

The goal of Intercultural Education is respond to the cultural diversity that prevails in developed democratic societies. For this, it starts from approaches that respect cultural pluralism, as something inherent to current societies, valuing it as a source of wealth for all members of a society. From the pedagogical point of view, cultural differences are understood as an important educational resource. Intercultural Education proposes an educational practice that turns the cultural differences of individuals and societies into the focus of reflection and research.

It must not be forgotten that Intercultural Education is ultimately a form of attention to diversity . From this perspective, its contribution in the educational and social field is much better understood, since it constitutes the final stage in the process of acceptance and appreciation of cultural variables. To understand this better, it is necessary to know what are the existing models in the treatment of diversity, whatever it may be, including linguistic and cultural.

We live in a diverse world in which biodiversity has been talked about for a long time. On the other hand, diversity is one of the defining characteristics of humanity and, therefore, of our societies. The school is a reflection of this social variability and must treat all the diversities that come together in it, from cultural to physical or capacity. When dealing with this diversity, they have started from different budgets that attended to ideological and political wills. Traditionally, two theories have been based on: the deficit theory and the difference theory Arroyo González, Mª José. (2012) . Both intend to attend to diversity, although from completely different approaches. Each one of them has given rise to different educational models to deal with this inherent diversity of people and societies.

The two theories are based on the close relationship between diversity and inequality , but they give completely different solutions to that relationship. The deficit theory proposes eliminating these differences through educational models based on assimilation and compensation , while the difference theory does not propose eliminating them, but rather proposes mutual enrichment by developing specific educational models: multicultural and intercultural . AS POINTED OUT by Tuts (2007:34)

Intercultural education is too often confused with attention to immigrant students and the

vehicular language prevails as an integration factor, forgetting its necessary transformation into a bonding language of communication. Respect for difference often borders on promoting cultural relativism, while coexistence is seen as a utopian situation. As for social cohesion, it is often confused with homogeneity, monolingualism or monoculturalism. Therefore, it seems that cultural and linguistic diversity tends to be disconcerting and suspicious.

Intercultural education and inclusion present multiple connections that can and should guide our educational practice. As we will analyze later, intercultural education is a way of doing school and educating.

II. CHILE CONTEXT

Currently, several indigenous groups in Chile still use their language, which constitutes one of the heritages that define their identity, including their way of life, their history, their rituals, their philosophy, and their customs.

Indigenous people in Chile face several linguistic challenges. When they are in the city or in environments where Spanish is exclusively spoken, they must adapt to this situation, leaving their native language to communicate sporadically with a member of their group who speaks the language at family gatherings or friends. The groups that reside in rural centers maintain their language and culture to a greater extent, which allows them to perpetuate some ancestral rituals. However, only the elderly speak the native language in many of these places, including the rural areas of Arauco, Malleco, Cautín, Mehuín and Panguipulli, mainly. There are also Mapuche people who speak their language in the cities to which a large number of them migrate as temporary or permanent workers, more specifically in Santiago, Concepción and Temuco.

Indigenous languages have been strong enough to survive over time, facing enormous assimilation pressures from Spanish as the official language. There is still a significant number of speakers of each of the languages that are still in force, such as Aymara, Rapanui and Mapudungun. The

current process of re-ethnification has activated the development of the vitality of these languages in various communities, both rural and urban. Within this motivation, it is necessary to plan the resources available to guide all these efforts under the tutelage of a program with realistic goals and effective procedures. This means obtaining the necessary information to diagnose the conditions in which the language is found, and thus choose the appropriate intervention strategies leading to its revitalization. Approaches, resources, ideas and goals should be based on the experiences and knowledge of indigenous groups, as well as the theoretical and practical experiences and knowledge of linguists, educators, anthropologists and other social scientists.

III. INTERCULTURALITY AND EDUCATION

Interculturality is a dimension that is not limited to the field of education, but is present in human relations in general as an alternative to authoritarianism, dogmatism and ethnocentrism. However, the search for more democratic and pluralistic societies supposes educational processes that affirm and provide experience of living in democracy and respect for diversity. As educators we have an inescapable responsibility.

Interculturality in education appears closely linked to the new spirit of equity and quality that inspire current educational proposals, thus overcoming the egalitarian vision that prevailed in the Latin American social scene since the arrival of the first liberal waves on the continent. Interculturality in education supposes a double path: inward and outward, and that one of the necessary directions to which an intercultural educational project should be directed, particularly when it comes to peoples who have been the object of cultural and linguistic oppression, (such as ours) is precisely towards the roots of one's own culture and one's own vision of the world, to structure or recompose a coherent universe on which one can, later, cement from a better position the dialogue and exchange with cultural elements that, if well alien, they are necessary both to survive in today's world and to achieve better living standards, taking advantage

of those advances and scientific-technological developments that are considered necessary.

Intercultural education must be understood in a pedagogical process that involves various cultural systems. It stems from the individual and collective right of indigenous peoples, which entails not only enjoying the right to education like all citizens, but also the right to maintain and cultivate their own traditions, culture, values, but also the need to develop intercultural skills that allow any citizen from any part of the country, whether they belong to the hegemonic culture or not, to be able to coexist democratically with others.

Based on the experience accumulated in the first years of implementation of bilingual intercultural education in the Chilean educational system, and having clarity of the fundamental role of the indigenous language for the recognition, valorization and respect of the culture, worldview and history of the peoples. natives, the challenge of converting the school into an educational space in which the opportunities for learning that language are guaranteed to its students is imposed, in a systematic and relevant way to their reality.

Thus, in 2009, the Chilean Ministry of Education established the Fundamental Objectives and Minimum Mandatory Contents for the creation of the Indigenous Language Sector in Basic Education; which allowed to begin the design of Study Programs for the Aymara, Mapuzugun, Quechua and Rapa Nui languages. The foregoing, considering at least three different realities of access to the indigenous language by girls and boys: those whose mother or family language is one of these four languages, those who hear the indigenous language only in their social environment, and those who only listen to it at school.

The Indigenous Language course, with four assigned hours per week, seeks to strengthen the cultural and linguistic knowledge of four indigenous peoples who still maintain their native language in force: Aymara, Mapuche, Quechua and Rapa Nui. For this, a pedagogical duo is

formed, made up of a classroom teacher (who supports pedagogical aspects) and a traditional educator, the person in charge of imparting traditional knowledge, especially the indigenous language.

The teaching of the Aymara, Mapuzugun, Quechua and Rapa Nui languages was articulated around two axes, conceived as complementary:

- Orality: understood as a dynamic and contextual form of knowledge, and recognized as the traditional way of transmission and accumulation of knowledge of native peoples.
- Written communication: understood as highly complex for indigenous languages, due to the history of oral tradition in the transmission of knowledge. However, knowledge of the written code of the indigenous language is promoted through the Spanish graphemes.

The Indigenous Language subject has been implemented gradually, beginning in 2010 in the first year of basic education to reach 2018, the teaching and learning of Indigenous languages in eighth grade.

Additionally, schools can autonomously develop their own plans and programs around indigenous knowledge, which are incorporated into the school curriculum as subjects or as extracurricular workshops. These initiatives have allowed educational communities to generate content relevant to their territories and the particularities of their students.

By way of example, within the plans and programs that the establishments develop, there are workshops on ethnic cooking, interculturality and development, worldview and Mapuche-Huilliche language, Mapuche traditional medicine, and Chedungun language, among others.

The creation of this subject is based on the following laws and decrees:

- The indigenous law (1993) that favored the beginning of a systematic process for the teaching of native languages and cultures, by indicating the establishment of a

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programmatic unit that facilitates access to this knowledge.

- General Education Law (2009), which establishes obligations and principles, one of them being interculturality, which states: "The system must recognize and value the individual in their cultural and origin specificity, considering their language, worldview and history". In articles 28, 29 and 30, it commits the teaching of the Indigenous Language in establishments with a high indigenous population for pre-school, basic and secondary education.
- Decree No. 280/2009, which incorporates the Fundamental Objectives and Minimum Mandatory Contents of the Indigenous Language Sector for the level of basic education and establishes the obligation to implement this subject in all establishments that have an enrollment of more than 20% of students natives.
- ILO Convention 169, ratified by Chile in September 2008. Convention on the Rights of the Child, ratified in August 1990. Both normative instruments refer to the right of children belonging to indigenous peoples to receive education and respect their language and culture.

3.1 Interculturality for Everyone

Interculturality allows us all to know each other, value each other and live with different cultural universes, enriching our experiences as people and as a society. In this sense, interculturality seeks to generate a reflection in the educational system that makes it possible to recognize, value and understand the richness of the diverse, questioning with it, for example, the imposition and hierarchization of a certain type of knowledge or the establishment of social relationships.

In terms of native peoples, from the recognition of their existence and social, cultural, spiritual, economic development, among others, as cultures that inhabit this territory centuries before colonization, the Mineduc (2015) in a process that aims to settle the historical debt that the State has towards these peoples, assumes the policy of revealing the languages, cultures, histories and worldviews of indigenous cultures in the processes of integral quality educational improvement of the country's establishments, with the aim of promoting a citizenship intercultural. As of 2016, 223,087 indigenous students were identified in the school system in 9,335 educational establishments (79% of the total number of schools in the country, according to the State Statistics Institute (INE).

In the same way, the Ministry of Education has decided to develop its own concept of interculturality, seeking to reflect the reality and the environment in which we are immersed as a society: Interculturality is an ethical-political social horizon under construction, which emphasizes horizontal relationships between the individuals, groups, peoples, cultures, societies and with the State. It is based, among other things, on dialogue from otherness, facilitating a systemic and historical understanding of the present of the diverse people, groups and peoples who permanently interact in the different territorial spaces. Interculturality favors the creation of new forms of citizen coexistence among everyone, regardless of nationality or origin. For this, symmetrical dialogue is possible by recognizing and valuing the richness of linguistic-cultural, natural and spiritual diversity. In the case of native peoples, it reveals their characteristics and different systems that problematize, and at the same time, enrich the constructions of the world, ensuring the exercise of individual and collective rights.

3.2 Bilingual Intercultural Education

Children and young people belonging to indigenous peoples have the right to learn in contexts of greater equality, in conditions that adjust to their cultural particularities, their language, and their way of seeing the world.

As in the rest of the countries of the region, our educational system assumed a role of cultural and linguistic homogenization that left out of the discourses of "national identity" an important part of the knowledge, values and ways of life of the original peoples. This pedagogical imbalance over time has had a negative influence on the identity

and self-esteem of people belonging to the original peoples, as well as on the possibility of building a multicultural and multilingual country.

In this context, the State assumes the duty to generate the bases to enable an intercultural bilingual education that allows boys and girls to learn the language and culture of their peoples, through the incorporation, in the national curriculum, of the Language subject. Indigenous (currently in Aymara, Quechua, Mapuzugun and Rapa Nui) for basic education.

This subject, which aims to enable children from indigenous peoples to communicate in their vernacular language, is implemented in educational establishments that want to promote interculturality and in those that have an enrollment equal to or greater than 20% of indigenous students. , and is developed by the traditional educator, the person responsible for transmitting cultural and linguistic knowledge to the students of the establishment.

The implementation of this subject is not the only way to transmit this knowledge; The school can also develop intercultural workshops, revitalization strategies for languages and cultures in danger of extinction, and linguistic immersion in specific contexts.

3.3 Training in Interculturality

Teacher training is a key aspect in the implementation of intercultural education. Chile needs to train its teachers as mediators and facilitators of the development of schools that value and integrate the cultural wealth of native peoples into the learning experience of their students.

The Ministry of Education has developed a joint effort with two universities to strengthen a teacher training plan in Pedagogy of Bilingual Intercultural Basic Education. In this sense, it has established collaboration agreements with the Catholic University of Temuco (UCT) and with the Arturo Prat University (UAP) of Iquique.

In the case of the UCT, this plan has two target groups: Mapuche students from the Biobío, La Araucanía, Los Lagos and Los Ríos regions; and students of the Pedagogy career in Bilingual Intercultural Basic Education in a Mapuche context. Meanwhile, the initial training plan of the UAP of Iquique is aimed at Aymara, Licanantai and Quechua students from the regions of Tarapacá, Arica and Parinacota, and Antofagasta. Other activities are also included within the agreements such as: developing linguistic immersion activities for students; disseminate the career among young people in secondary education in municipal establishments in communes with a high density of indigenous population; and hold reflection colloquiums with students from other careers and schools from other training disciplines, among others.

In the same way, the Mineduc intends to strengthen the training in interculturality for teachers of subsidized municipal and private establishments through the development of a Postgraduate in Interculturality, and through a B-learning course, in charge of the Center for Improvement, Experimentation and Pedagogical Research (CPEIP).

On the other hand, the Ministry of Education provides support to traditional educators who implement the Indigenous Language subject or develop intercultural workshops through a Training Course whose objective is to provide tools in pedagogical, cultural, and linguistic aspects to promote learning. task of this figure within the schools.

3.4 Traditional Mapuche Educator

The first lines of work of the Ministry of Education, in terms of bilingual intercultural education, were linked to community participation, in order to promote meetings and collect knowledge with a territorial approach, from the voice of traditional authorities, communities, families, and indigenous professionals. ; In the same way, it sought to identify current practices and knowledge in the communities, in order to replicate some of this knowledge in the training of children and children belonging to these educational communities.

It is in this context that the figure of the Community Cultural Advisor, now known as Educator or Traditional Educator (ET), arises and is normalized; which is governed at first as a binding actor between indigenous communities and educational establishments for the transmission of knowledge about their culture and language.

This figure has been strengthened in the educational communities, achieving among other things: recreating learning strategies of their communities, developing didactics for the teaching of indigenous languages, collecting oral stories, and systematizing knowledge associated with mathematics, sciences, cosmogony, among others.

In this context, and from the creation of the Indigenous Language subject, the ET becomes relevant as it is responsible for specifying the teaching of the Aymara, Quechua, Rapa Nui and Mapuzungun languages in establishments that have 20% of indigenous enrollment, or in those who want to promote interculturality through intercultural workshops, bilingualism, or cultural and linguistic revitalization.

Some aspects to consider in the fulfillment of their functions are the following:

- Accredit sufficient linguistic and cultural skills to perform in the teaching of the languages and cultural knowledge of the original peoples. Be validated by the Indigenous Communities or Associations linked to the educational establishment.
- Teaching preparation, understanding as such the ability to structure the teaching-learning process with learning objectives to be achieved in the students from the point of view of indigenous knowledge,
- Creation of an environment conducive to learning, that is, the ability to promote conditions in the use of multiple spaces and diverse methodologies, which favor intercultural learning,
- Teaching for learning of all students, that is, the ability to deliver linguistic and cultural knowledge in diverse realities to achieve

learning objectives and propose strategies according to these.

3.5 Training and Accompaniment

For more than fifteen years, community cultural advisors, in the first instance, and currently traditional educators, have received training through training courses and accompaniment in the linguistic, cultural and pedagogical, with emphasis on the development of competencies, both at the curricular and extracurricular level.

These training courses have as main objective to allow a better performance and an adequate and pertinent insertion on the part of the traditional educators in the educational system; and therefore, they acquire specific characteristics depending on the territory where they are carried out, respecting regional autonomy and promoting their own strategic development.

The trainings, carried out face-to-face and with an average duration of 150 hours, are financed by the Bilingual Intercultural Education Program and developed by three entities according to regional realities: a) universities together with organizations focused on indigenous languages, b) teams regional ministerial offices (Regional Ministerial Secretariats of Education), and c) consultants and/or independent professionals.

IV. CURRENT CHALLENGE

The rescue of native languages is of great importance, not only because it strengthens the culture and identity of the native peoples that inhabit Chile, but also because it gives our country an identity and allows us to project ourselves as a more democratic, inclusive and respectful society.

The current situation of the languages recognized by indigenous law is critical and represents a complex challenge that calls upon all of us, not only those who belong to a certain indigenous people, since society is responsible for the revaluation of the vernacular languages that we have been relegated to increasingly reduced spaces, to the point of endangering its existence.

The condition in which the different languages of the original peoples that inhabit Chile are found today is complex; Even though it is a multilingual and multicultural country, Spanish continues to be the language of communication, teaching, and regulations, which is why it has the greatest number of functions. The studies, investigations and reports consulted indicate that the main problems identified are the following:

At the macro level:

● Lack of status of languages: understood as the possibility of giving functionality to the language in the different institutions and media from which the minority or minoritized language has been excluded.
● Lack of language corpus: refers to a series of actions that are carried out with the aim of standardizing the language, such as defining a graphemary, creating dictionaries, grammars and creating specific entities that are in charge of the subject (academies), among others.
● In the context of speech and communication, lack of spaces for use and possibilities of use, functionality beyond the local or familiar.
● Spanish is the official language of communication and teaching; This can be seen in the hegemony of Spanish in the media and transmission of languages: texts, media,

arts, among others. The same is true for formal and informal education.

At the micro level, the main obstacles refer to the attitude of the speakers, due to self-discrimination, lack of motivation to deliver knowledge about the mother tongue to the next generations, adverse local contexts, the decrease of communities or speaking people in a territory and lack of external support to promote the indigenous language because it is not part of the economy, work, professional training.

Another challenge in this matter is related to the lack of quantitative and qualitative data that allow us to know more precisely the situation of the languages and their speakers in Chile today. There are only two official sources with general information on the 9 indigenous peoples: CASEN (MIDEPLAN) and CENSO 2002 (INE).

The indigenous languages of Chile that maintain some degree of sociolinguistic vitality are Mapudungun, Aymara, Rapa Nui and Quechua. According to the 2009 CASEN Survey, only 24% of the population that belongs to these towns would have some degree of competence in their languages, with significant geographical and regional variations in terms of the number and proportion of speakers. (BCN Source)

Year	Speakers	Just understand	Does not speak or understand
2000	14%	13.8%	72%
2003	16.8%	18.9%	64.4%
2006	14.2%	14.1%	71.7%
2009	12%	10.6%	77.3%
2011	eleven%	10.4%	78.6%
2013	10.9%	10.4%	78.7%
2015	10.7%	10.7%	78.6%

Source: Casen

4.1 Treatment of a declining language

When it is noticed that a language is in a state of decline, it is possible to develop a maintenance program for that language. This depends on the state it is in, the historical causes of its decline, access to funds and human and financial

resources, and the interest of the community. In a first opportunity, many members of the group want to develop fluency in the use of the language, thinking that it will be easy to acquire the ancestral linguistic code again. Unfortunately, this is not a task without difficulties, since most

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indigenous children speak Spanish as their first language and are barely familiar with their native cultural traditions.

Therefore, Spanish becomes the model of correctness or naturalness and learning another language causes difficulties in the production of new sounds or in the combination of words in patterns that are different from those of the first language learned. The researchers warn that, after the puberty stage, it is difficult to process information using different rules and structures in a second language.

Actually, the best way to keep a language alive is through communication with children, using the indigenous language in its first stage of language acquisition. The fact of handling two languages in the family environment allows the child to acquire two linguistic codes simultaneously and without difficulties. Certainly, parents have their own preferences regarding the use of one language over another. This can become rule-setting for children who perceive in which contexts they can speak the indigenous language or Spanish. They generally speak Mapudungun with their grandparents at home, but speak Spanish with their peers in other contexts. Finally, they prefer to use Spanish in all situations.

A language maintenance program should include the gradual increase in the number of speakers as a goal. This requires the participation and preparation of teachers who speak the language fluently and manage the difficulties involved in its teaching. It is advisable to locate some members of the indigenous community who are willing to collaborate and undergo an intense stage of preparation, to carry out this task in order to acquire formal knowledge in an assessment process within the community itself.

The indigenous language maintenance program must also measure the importance of Spanish and the indigenous language. Both languages are essential to the community. But one should not be neglected or favored to the detriment of the other. Even though Spanish is officially taught throughout the Chilean school system, there is some evidence that the type of Spanish spoken by indigenous communities differs from the formal dialect accepted in the official milieu. The two languages in contact have influenced each other over time.

The family dialect of Spanish, spoken by the adult generations in each indigenous group, has been transmitted from generation to generation, becoming a variety with phonological and grammatical features of the indigenous language. This requires a sociolinguistic study that can provide much insight into the difficulties indigenous students face when learning the standard variety of Spanish taught at school. Likewise, it can provide a guideline on the differences between the indigenous language and formal Spanish.

4.2 Commitment of the Chilean Government and the Maintenance of Indigenous Languages

Scholars agree that the ultimate goal of a maintenance program is to achieve fluency in the use of the indigenous language. If this is not possible, at least a feeling of appreciation of the language and its relevance as a means of maintaining cultural identity can be achieved. The factors that determine which goals are realistic and which are difficult to achieve can be learned through an objective assessment of the needs of each community.

It is known that any language suffers a decrease in its use, due to historical reasons of competition with the language of a group that expands its area of influence through the media and access to material goods. The first contacts between Spaniards and indigenous people were negatively aggressive, due to the purposes of the conquest that included the acquisition of new territories, discovery of precious metals, conversion to a new religious doctrine, and search for labor for forced labor. As a result of this, the indigenous people suffered the decrease of their population and the abuse of their culture that originated a feeling of frustration and of a conquered people that has hardly been overcome throughout Chilean history.

V.   FINAL REFLECTION

Thinking about interculturality implies delving into the political approaches of the country that

support the different intercultural and bilingual educational proposals that are generated from different social actors, among which appear national organizations and governments, regional education secretariats, CONADI, non-governmental organizations, civil associations., ethnic movements and organizations, among others.

Thus, Intercultural Education is not possible by copying and/or extra-logical adaptation of identity values and institutionalization devices of Western civilization, because, ultimately, they only tend to cover up the continuity of evangelization. socio-civilization, of the cultural control that they historically exercise over the diverse peoples of the world and that have made possible the conformation of the current global order; rather, on the contrary, they demand not only public recognition of the socio-cultural plurality that forms the very substrate of contemporary social systems, deconstructing the modern ideal of the monocultural Nation State, but also the historical affirmation of the values proper to the identity construction of each of the existing communities in the world and, therefore, of the values of intercultural interaction.

Legitimizing community existence and cultural identity based on the similarities that can be discovered, evidenced, assumed, and implanted in the development of particular historical events, with the values and devices for the civilizational affirmation of the dominant culture, strictly speaking, does not mean confirming the irrefutable presence of alterity, of the right to difference and, therefore, of the urgent need for Intercultural Education, quite the contrary, represents the self-deception of camouflaging oneself as one's peer, as a neighbor, as an authentic being, that is, illegitimate projection of civilized, developed society, which for this very reason requires cultural evangelization so that it can fully develop. Thinking about the possibility of Intercultural Education, then, entails the unavoidable requirement of building new educational concepts that do not disguise the evangelizing claims of the dominant culture.

This has been a small reflection on Intercultural Education as a path towards educational inclusion. The aim throughout the article has been to show how both concepts share a multitude of ideas, and deep down allow for very specific ways of learning and teaching in the classroom. The great challenge at this time in school is to contribute to an interculturally inclusive education, as defined by García and Goenechea (2009: 35).

The recognition of social diversity and multiculturalism demands the emerging transformation of contemporary educational processes, towards the appropriation of the values of identity construction of the context in which individuals develop, so that they can build their personal life project, in addition to participate significantly in the socio-cultural and political-economic transformation of their community of life, without neglecting the interaction in the order of global society. Insofar as contemporary societies are constituted in the recognition of onto-historical alterity, therefore, an education is required that not only respects, but also promotes identity diversity, within a framework of intercultural dialogue, where all individuals and communities have the right to appropriate their own cultural values, as well as the cultural capital available in today's knowledge society.

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In-Service Teachers' Attitudes Towards the Inclusion of Learners with Additional Needs in Regular Classrooms in South Africa

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ABSTRACT

In the process of promoting inclusion in education, in-service teachers' preparedness is being identified as a vital factor. This study examined teachers' attitudes towards the inclusion of learners with additional needs. We followed a sequential mixed method design, where 63 in-service teachers were sampled through a purposive sampling strategy. Data was collected through a closed and an open-ended questionnaire. The overall finding was that teachers have a positive attitude towards the inclusion of learners with additional needs although they face challenges that affect their explicit attitudes. The finding suggests that in order to combat these challenges teachers should be prepared more for the inclusion of all learners to enhance their implicit attitudes and more resources should be provided to mitigate against these challenges.

Keywords: in-service teachers, inclusive education, attitudes, learners.

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In the process of promoting inclusion in education, in-service teachers' preparedness is being identified as a vital factor. This study examined teachers' attitudes towards the inclusion of learners with additional needs. We followed a sequential mixed method design, where 63 in-service teachers were sampled through a purposive sampling strategy. Data was collected through a closed and an open-ended questionnaire. The overall finding was that teachers have a positive attitude towards the inclusion of learners with additional needs although they face challenges that affect their explicit attitudes. The finding suggests that in order to combat these challenges teachers should be prepared more for the inclusion of all learners to enhance their implicit attitudes and more resources should be provided to mitigate against these challenges.

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I. INTRODUCTION

Providing in-service teachers with training in working with learners who have additional needs is one of the key factors in promoting the implementation of inclusive education. Thus, identifying factors affecting in-service teachers' attitudes towards inclusion of learners with additional needs is critical for its success (Hong, Hoon Ryoo, Noh & Shin, 2018). Teacher education is becoming more important for training in-service teachers to be positive and receptive toward inclusive practices of learners with additional needs (De Boer, Jan Pijl, & Minnaert, 2011; Wilkerson, 2012). Among other factors research (Beacham & Rouse, 2012) suggests that in-service teachers' attitudes toward inclusion for learners with additional needs are negative.

Learners with additional needs are increasingly being placed in inclusive education settings to educate them in the least restrictive environment (LRE), where they can improve social integration by interacting with peers (Boutot and Bryant, 2005). Previous research (Wilkerson, 2012) suggests that many teachers are still not prepared to teach learners with additional needs in general education classes and they lack sufficient knowledge about learners with various learning difficulties. (Snyder, 1999). Given the importance of in-service teachers' beliefs, values and attitudes toward inclusion, conversely, some researchers (Bornman & Rose, 2010) have investigated potential factors that influence inclusivity. Studies (Shippen, Flores, Crites, Patterson, Ramsey, Houchins, & Jolivette, 2011; Park & Chitiyo, 2011; Wilkerson, 2012) that looked at what influences teachers' positive attitudes towards inclusive education found some factors to be: taking a special education course, teaching and working experience with learners with additional needs, frequency of contact with these learners, and formal training in inclusive education. However, relatively few studies specifically focused on in-service teachers' attitudes toward learners with additional needs.

Thus, the purpose of this study was to add evidence-based information on the in-service teachers' attitudes towards the inclusion of

learners with additional needs to uniquely contribute to the literature in this field. Therefore, the present study focused on this important area. In this regard, it is important to consider first, the background to inclusive education in South Africa. Secondly, a brief literature review and theoretical frameworks on teacher attitudes, towards inclusion, and thirdly, the in-service teachers' field experience of inclusion in South African schools.

The education system in South Africa has undergone a far-reaching policy change since the dawn of democracy more than two decades ago (Engelbrecht & Oswald, 2005). Before 1994, the South African education system was based on racial segregation as well as disability. Because of this, a great number of children with impairments were unable to access public education (Department of Education, 2014). In essence, such a practice was discriminatory against people with disabilities and a violation of children's rights as enshrined in the charter of the United Nations Organisation. On its formation, the new democratic dispensation sought to alter the situation by announcing major education policy changes by, among other things, making education accessible to all learners irrespective of impairments. In other words, education became inclusive for all learners in the country.

In July 2001, the Education White Paper 6, titled *Building an inclusive education and training system*, was established (Department of Education, 2002). The policy succinctly outlines the framework for inclusive education in the country. Consequently, the policy on inclusive education became official within the South African education landscape. The policy was to take effect in some schools on an initial basis as a pilot study. However, it is now being adopted in all schools and teachers are being trained on the question of inclusivity for purposes of thorough and successful implementation.

Additionally, the policy is designed to help teachers to handle barriers to learning as well as enabling them to respond to a range of learning needs in the classroom (Bornman & Rose, 2010). Section 29 of the Constitution of South Africa, Act

108 of 1996, comprises the Bill of Rights, which, also affirms that everyone has the right to basic education; and the State is obliged to make education progressively available and accessible to all. This Constitutional provision includes learners who experience barriers to learning because of a disability. After all, Section 9 of the Constitution prohibits unfair discrimination based on, amongst other things, disability (Bornman & Rose, 2010). However, one of the challenges that the democratic state faces is the dire need to capacitate more teachers in the knowledge of different learners with additional needs (Bornman & Rose, 2010). Dalton, Mackenzie and Kahande (2012) conclude in their study that teachers struggle to handle learners with additional needs.

In 2014, the DBE introduced a policy on Screening, Identification, Assessment and Support (SIAS) for learners who experience barriers to learning. The policy supports the implementation of the main principles of *Education White Paper 6* (Department of Education, 2002). It provides a framework for the standardisation of the procedures to identify, assess and provide programmes for all learners. In addition, to ensure that additional support to enhance their participation and inclusion in schools is fostered in their learning. Again, the policy serves as a key bedrock for the transformation of the education system.

However, despite this strong evidence of the South African government's commitment to the agenda of inclusive education, a large number of learners continue to be excluded from mainstream schools (Dalton, Mackenzie, Kahande, 2012). Teachers seem to be either reluctant or unwilling to address this desperate need of children who are dropout of school. They report their challenges as lack of proper training at college or university, lack of professional teacher development programmes, poor classroom management, amongst others (Beacham & Rouse, 2012).

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II. THEORETICAL FRAMEWORK

We used the Associative Propositional Evaluation (APE) theoretical framework, which was developed by Gawronski and Bodenhausen (2006) to describe the teachers' attitudes. The APE model distinguishes between two evaluations, the associative evaluations, which include implicit attitudes or automatic emotive reactions and the propositional evaluations, explicit attitudes, also referred to as evaluative judgments (Gawronski & Bodenhausen, 2006).

The model avers that change in explicit measures is greater than implicit measures when novel evaluative associations are developed and old associations are disallowed. On the other hand, the implicit measures are greater than explicit when newly formed evaluative associations are rejected (Petty, & Briñol, 2006). However, when the two evaluations clash, implicit contradictions occur. In this way, attitudes are built or accepted toward a new initiative, such as accommodating learners with additional needs. The model was useful in providing a framework for looking into the teachers' attitudes towards the inclusion of learners with additional needs.

Without going into finer details into the operation of the model, we adopted it as a framework to describe how teachers' implicit attitudes affect their acceptance of learners with additional needs. For example, the positive evaluations in table 1 may be that teachers were in the automatic mode, which might have not considered the external factors and thus did not consider the propositional evaluations. This was identified by their reactions in figure 1, where they did not even know what resources were enablers of the implementation of inclusive education.

Several studies have investigated explicit attitudes of different stakeholders in an educational system towards the inclusion of learners with additional needs into mainstream schools (Ajzen & Fishbein 1980, Avramidis, Bayliss, & Burden 2000; Avramidis & Norwich, 2002; Elhoweris & Alsheikh, 2006; Beacham & Rouse 2012). While such research generally indicates positive and explicit attitudes toward the general philosophy of inclusive education, teachers expressed neutral to negative attitudes when asked directly about the inclusion of learners with additional needs in their classrooms (DeBoer, Pijl, & Minnaert, 2011). The APE model describes this neutrality as an ambivalent state; where there is a clash between the implicit and the explicit attitudes.

To understand why teachers' attitudes appear positive to teachers when there is an outcry that its implementation is slow needed an investigation, especially among in-service teachers who come from mainstream schools. Our study regarded such knowledge as important to have because of the assertion that attitudes are the best predictors of behavioural intentions (Ismailos, Gallher, Bennet & Li, 2019). In the next section, we turn our attention to teachers' experiences of inclusive education.

III. IN-SERVICE TEACHERS' EXPERIENCES OF INCLUSIVE EDUCATION

Studies on in-service teachers' experiences of inclusive education abound (Malinen, Savolainen, & Xu, 2012; Yada & Savolainen, 2017). These studies cover a wide range of issues, which include teachers' self-efficacy in teaching within inclusive classrooms. For example, in Beijing about 400 in-service teachers were examined through a questionnaire containing a Teacher Efficacy for Inclusion Practices (TEIP), to establish the relationship between self-efficacy for inclusion practices, their background factors and attitude towards inclusion. The study found that three factors, namely: teacher self-efficacy, collaboration and long experience in teaching learners with disabilities were the strongest predictors of teachers' attitudes towards inclusive practices.

In Japan, a study by Yada and Savolainen (2017) on teachers' attitudes towards inclusive education and self-efficacy was conducted. A total of 359 in-service teachers revealed that teachers' sentiments toward disabilities were generally positive. However, the majority of teachers had some concerns about practicing inclusive education in their classrooms due to several

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factors, such as lack of training, and resources, amongst others.

In South Africa, not much is known about the teachers' attitudes towards inclusive education (Prinsloo 2001; Nel, Müller, Hugo, Helldin, Bäckmann, Dwyer, & Skarlind, 2011; Swart, Engelbrecht, Eloff, & Pettipher, 2002, Savolainen, Engelbrecht, Nel, & Malinen, 2012). A few studies that exist in this area are old and scattered, thus unable to provide useful insights in developing teacher education. However, more critically is that these studies did not focus on the teachers' attitudes. The only study in South Africa that looked at this topic is that of Savolainen et.al (2012). However, this was a comparative study of in-service teachers' attitudes and self-efficacy in implementing inclusive practices in South Africa and Finland. Therefore, this study is for policymakers, education planners and researchers in the field.

Although this is such an important area, especially for South Africa given its obnoxious past policies of exclusion, limited studies have been conducted on teachers' attitudes. To date, most empirical studies on inclusive education have not thoroughly investigated this topic. Most have been conducted on other topics such as the readiness of in-service in full-service schools to implement inclusive education (Themane & Thobejane, 2019), teachers' understanding of inclusive education (McConnachie, 2013), an understanding of the interaction between policy and implementation of inclusive education (Harmuth, 2012) and assisting Foundation Phase teachers to implement inclusive education (Neethling, 2015).

Therefore, it is important to investigate this area for at least two reasons. Firstly, at an international level studies examining attitudes and similar constructs within an international framework may shed light on the role of context-specific factors, which may be valuable for teacher trainers and policymakers. Secondly, if it is found that in-service teachers hold positive attitudes towards inclusive education it may allow, sustain and encourage practices that will guarantee, to a certain extent, successful inclusion of all learners

regardless of their diversity (Sharma, Forlin, Loreman, & Earle, 2006). To this end, we sought to answer the following research question: What are the in-service teachers' attitudes towards the inclusion of learners with additional needs in mainstream schools in South Africa?

IV. RESEARCH METHODOLOGY

4.1 Research Design and Sampling

We followed a mixed methods design with convergent and explanatory sequential components (Creswell, 2011). In so doing, we hoped that the mixed design would give us an impetus to engage in an ongoing critical reflection, negotiation and verification factors that underpin the teachers' attitudes. We felt that while a survey design would give us a window to gaze into the teachers' views, qualitative data would enable us to produce a range of complementary data and measurement that has the credibility and trustworthiness to capture the complexity of the teachers' attitudes.

Sixty -three (63) teachers were randomly selected from a population of 100 in-service teachers from the Limpopo Provincial Department of Education. The teachers were recruited from five districts: Capricorn, Mopani, Sekhukhune, Vhembe and Waterberg) in the Province by the Department. They came from different schools (full-service schools, piloting schools and special schools). The purpose was to train them for inclusive education, through a Short Course in Inclusive Education at the University of Limpopo.

4.2 Data Collection

Data was collected through a closed-ended questionnaire (part one) and an open-ended questionnaire (part two), which was adopted from the Teaching for All Evaluation and Monitoring Study (2019). In part one, the teachers were expected to express their views on seven statements about attitudes on a four-point scale (strongly agree, agree, disagree and strongly disagree).

The statements were as follows: a) I feel it is important to create inclusive classrooms, b) I feel

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that it is important to use diverse teaching methods to accommodate learners who experience barriers to learning, c) I feel it is important to work with other teachers to make my teaching more inclusive, d) Teaching learners with disabilities is rewarding, e) I have high expectations and aspirations for all learners, f) In my teaching, I will deal with difficulties/ sensitive issues such as racism, and g) I am familiar with the resources that learners with disabilities need in order to learn.

In part two, the teachers were expected to express their views on a scenario (by answering two questions) reflecting inclusive education practices through writing on the questionnaire booklet provided. The scenario presented a story of an 11-year-old girl (grade 4) whose parents were HIV positive and later divorced. Apparently, their separation affected her schoolwork and as such, teachers shunned her. Consequently, she was distressed and withdrawn and often neglected her hygiene.

The teachers were asked to respond to the following two questions: 1). which policies or a set of guidelines would you turn to, to help the learner? 2). which approaches (in the classroom and the school at large) would you use to address this problem to address her problems?

Procedures of data collection Ethical clearance for the research was obtained from the Turfloop Research Ethics Committee (TREC/84/2019: IR). The nature and the purpose of the study were explained to teachers. Further, we also clarified that those who did not want to participant in the study were free not to do so. Consent for participation was then obtained from teachers.

The questionnaire was administered before any teaching could commence. This was meant to establish where they were before they could receive new information on inclusive education.

4.3 Data Analysis

Data was analysed through Statistical Package for Social Sciences (SPSS) V.22 for descriptive statistics (means and standard deviation) for frequencies. The open-ended question was analysed through NViVo 12, where themes and categories were generated.

V. RESULTS

a) Results from closed-questionnaire

Table 1: Below presents frequencies on statements about attitudes

Statement	Frequencies %			
	SA	A	D	SD
a) I feel it is important to create inclusive classrooms	68.3	28.6	1.6	1.6
b) I feel that it is important to use diverse teaching methods to accommodate learners who experience barriers to learning	69.8	30.2	00	00
c) I feel it is important to work with other teachers to make my teaching more inclusive	68.3	30.2	00	1.6
d) Teaching learners with disabilities is rewarding	57.1	38.1	4.8	00
e) I have high expectations and aspirations for all learners	55.6	44.4	00	00
f) In my teaching, I will deal with difficulties/ sensitive issues such as racism	44.4	39.7	12.7	00
g) I am familiar with the resources that learners with disabilities need in order to learn.	27.0	38.1	30.2	4.8

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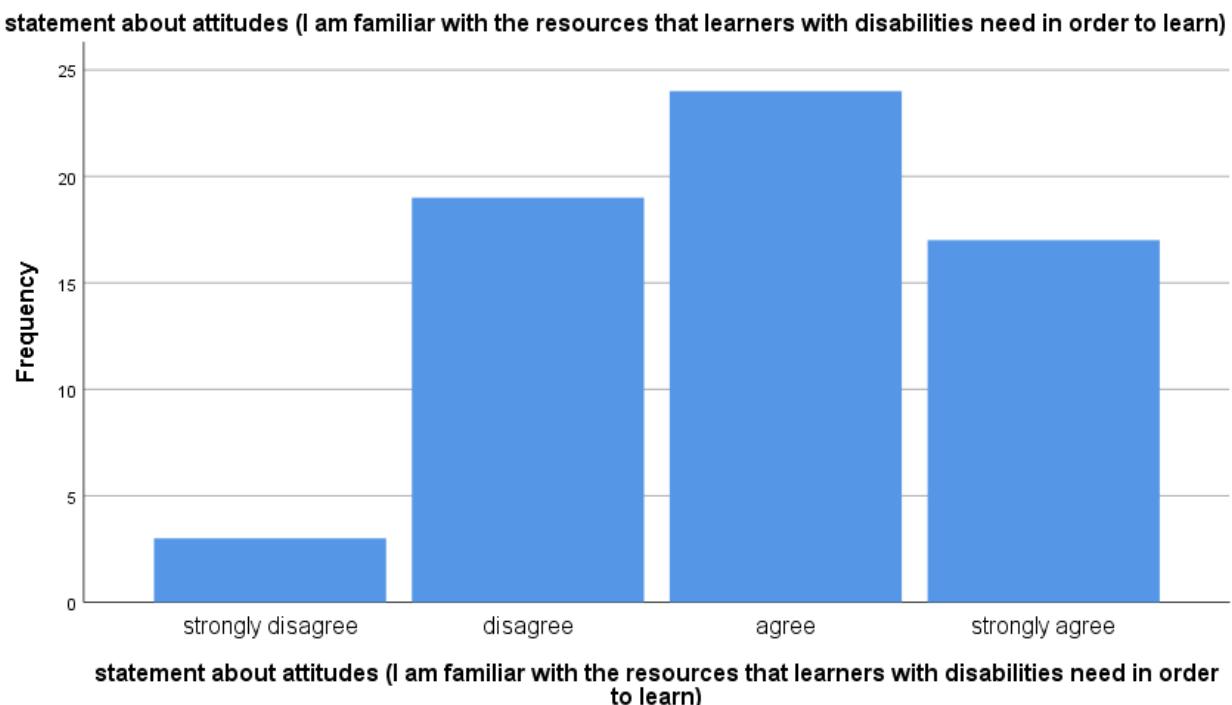
Figure 1: Statement about attitudes (I am familiar with the resources that learners with disabilities need in order to learn)

VI. RESULTS FROM THE OPEN-ENDED QUESTIONNAIRE

We followed Huberman and Miles' (2013) advice in processing the answers from the open-ended questionnaire by using two questions: *How would you go about addressing a learner who experiences social problems at school and in answering the question show what legislative frameworks, policies and guidelines would you use to help her?* This question was meant to evaluate the teachers' understanding of the legislative and policy framework that underpin inclusive education. From the analysis of this question, we came up with themes: a) the use of a legislative framework, b) the use of professionals in schools, c) awareness campaigns. Hereunder, we give a synopsis of each of these themes.

Finding 1: The utilisation of policies, guidelines, and policy frameworks

The results show that in general the teachers were aware of the availability of policies, guidelines and policy frameworks that could be used by the government. Of all the policies, the SIAS was the most cited. One respondent had the following to say:

"*According to White Paper No.6, all learners are able to learn irrespective of any barrier. SIAS is there to assist in the screening, identify, assess and support. if we can apply all the policies as prescribed all learners will achieve their best. ISP- Individual support programme should be in place and be recorded to follow up an individual progress of the learner by all stakeholders including parents.*"

Another said the following:

"*According to White Paper No.6 all learners are able to learn irrespective of any barrier. SIAS is there to assist in the screening, identify, assess and support. If we can apply all the policies as prescribed all learners will achieve their best. ISP- Individual Support Programme should be in place and be recorded to follow up an individual progress of the learner by all stakeholders including parents*". This is the same as what was said by the first respondent; write what the second respondent said.

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Finding 2: The use of professionals in schools

The teachers showed acumen in partnerships and collaborations between and among teachers in the implementation of inclusive education in schools. They indicated that inclusion could be strengthened by having professionals such as social workers, and psychologists within the schooling environment. They hinted that such professionals could be useful in a situation where a learner experiences social problems. For example, they could offer mental health support and help deal with issues such her HIV/AIDS. On this, one teacher had the following comment to say about the scenario of Buliswa:

> "*Her teachers only conclude that she has intellectual problems without trying to look at the strategies that can assist her to become a fully-fledged, responsible, acceptable adult in the society. Buliswa's problem of being stressful and loneliness needs intervention by her teachers, social workers, psychologists, specialists, health practitioners*"

Finding 3: Awareness campaign about personal hygiene

Teachers across primary schools often give concern about the lack of hygiene in their learners (Specht, 2016).). In this case, Buliswa's is one of them. In this regard, the respondent noted that she often neglects her hygiene and, as teachers is their duty to educate learners of both genders about the need to take care of themselves and their well-being, they said that:

> "Buliswa's *needs to be guided and molded to appropriate path in life. Moreover, the problem of neglecting personal hygiene, her parents are solely responsible to teach her the good hygiene practices from childhood, her teachers are responsible to show her that, she needs to be clean at all times.*"

From the analysis of the second question: How would you go about trying to address this situation in your classroom? In your response please include any teaching materials or teaching approaches you would use in your lesson for this, we came up with three themes as well: a) the use of teaching aids in the class, b) curriculum differentiation and c) the use of group work.

Finding 4: The use of teaching aids in the class

Research has shown that the use of teaching aids such as videos and pictures have a positive effect on the cognitive development in young kids, as Buliswa's is still in Grade4 her teachers advocate for more usage of visual media especially when tackling social issues within the curriculum content. They alluded to that by saying:

> "*Learners like television a lot, I will bring in a television set in class with more interesting visuals that include social activities.*"

Finding 5: Curriculum differentiation

Curriculum differentiation is a strategy that is used by teachers in inclusive education to teach in a diverse classroom that consists of even learners with additional learning need so that they don't get left behind, with the view that Buliswa's has reading and writing difficulties. Such a strategy can be beneficial to her and the whole class a, teachers perpetuated this by saying:

> "*Regarding her Intellectual challenges (reading and writing) –teachers to need differentiation in our teaching and assessing that learner*"

Finding 6: Using group work learning

Group work is an educational model that promotes learning and socialization among learners. Studies have shown that learners also benefit from working together in group activities as it fosters peer learning. Teachers have used group work to get students to actively participate and engage in their groups as within that group work they are allocated roles to fulfil. The allocation of roles makes learners take charge of the activity and feel responsible for their role within the group. Teachers alluded to this by saying: "Introduce group discussions where every learner has a role to play in a group and let them rotate on their roles."

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VII. LIMITATIONS AND DIRECTION FOR FUTURE RESEARCH

The study had its own limitation such as being conducted in one province (Limpopo), which could be addressed in future research. Another example of the study limitation, we have currently not varied the teachers according to the types of schools from which they came from Some in-service teachers came from full-service schools, others from special schools, others from regular schools). Varying the schoolteachers according to type could provide a better understanding of their self-efficacy. Future research could investigate attitudes toward other groups of teachers from full-service schools, to see to what extent they could responded to the questions asked.

Furthermore, although the theoretical frameworks underlying this research specifies attitude-behaviour links, (intended) behaviour was not assessed in this study. The recruitment of participants by the government officials might have introduced bias because these teachers were recruited on the basis that they were responsible for the inclusive education programme in their schools. This may have led to a relatively high-conscientious group about inclusive education. This might have affected the results.

Another factor that might have contributed to results is involving participants from both the Foundation, Intermediate and Further Education Training Phases. This might have led to the mixed feelings that we see in the results. In addition, future research could also include other demographic characteristics gender, age and place to gain a better understanding of the role of socio-demographic characteristics play on beliefs and attitudes.

Furthermore, in future it might be interesting to consider both the quantity and quality of interactions with learners with varied barriers to learning, such as those with hearing and visual impairment to provide a new vista in the developmental of differential attitudes. Finally, variances between attitudes toward inclusion and attitudes toward learners who experience barriers to learning raise the question; or as to what extent

social norms concerning inclusion are actively transferred to different areas of society. While research has been uniform in reporting people's acceptance of the mission to create equitable and inclusive communities. There have been far fewer publications that document the active production of such communities (Linehan and McCarthy, 2001). Only when people actively engage with the practical implications of inclusion, an educational system and a society for all can be created. In this regard, future research could explore the different ways in which people's understanding of inclusion affects their attitudes.

VIII. DISCUSSION

We examined the in-service teachers' attitudes towards the inclusion of learners with additional needs in mainstream schools. The use of a mixed methods research approach provided us with a reasonable evaluation of their attitudes on the inclusion of these learners in mainstream schools. Although we were cognisant of the limitations as we highlighted in the previous section, we were nevertheless convinced that the two methods we used to collect data provided us with a compelling snapshot of the attitudes that these teachers might hold concerning educating learners with exceptionalities. We used the APE to describe and interpret. Our overall finding is that teachers were both willing and ready to include and support with additional needs in their classrooms.

However, similar to previous findings (Burke and Sutherland, 2004), these teachers tended to hold idealistic positive beliefs and attitudes which were not based on practical experience. Our assertion is based on the fact that in figure 1 they seemed uncertain about the resources that learners with disabilities need to learn. According to the APE model, there was a split between the implicit evaluations and explicit evaluations on the support that these learners should receive.

But, the positive attitudes could be attributed to two explicit factors. One, the fact that they were recruited based on them being responsible for inclusive education in the schools or by working in special or full-service schools might have influenced their evaluation of the statements on

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attitudes, For example, teachers who might have had positive experiences at special schools could have influenced the results. These formed a big section of the teachers (Specht, 2016). Also, it is important to observe that positive attitudes towards inclusion seem to have fuelled them to a willingness to adapt programming and work more flexibly with learners to meet their needs. Finding one could also be explained by this implicit factor.

In addition, our findings suggest that the teachers' positive attitudes might be linked to their profile, such as their teaching qualifications (elementary and secondary) and accordingly, the ages/grades of learners whom they taught. In our data, we had only two teachers who taught at secondary schools. The rest were based at the primary school level. Of interest also is the fact that of the 63 teachers only 12 were males. We think that this profile of the sample might explain the positive attitudes of teachers toward the inclusion of learners with additional needs. Notably, the survey results, on item (d) reflected (57.1%) on strongly agreed that teaching learners with disabilities was a rewarding experience. Here the teachers expressed an implicit positive evaluation, but this was mitigated by the realities of the unavailability of resources. Others studies (Wilson, 2014; Hauerwas & Mahon, 2018) have identified this gap between positive attitudes and practices.

Finally, on findings 4, 5, and 6 indicate that in-service teachers were implicitly positive about the ability to provide differentiated instruction to accommodate diversity in their classrooms. Remarkably, as supported by our findings, earlier studies (Burke & Sutherland 2004; Wilson, 2014) also elucidate that when teachers' attitudes are positive they become resilient and become agents of change.

These findings have at least three implications. One, these positive attitudes, although there have been drawn from a small sample that cannot be generalised to a wider population should serve as motivation to those of us who are campaigning for the inclusive education agenda. Two, since implicit measures of change are greater than the explicit measures when a new initiative is

rejected, teacher education institutions intensify their training programmes for both pre-service and in-service teachers. Three, traditional models of attitude change should be replaced by approaches that promote sustained engagement with the teachers if the change is to happen. Therefore, hit-and-run approaches such as weekend workshops are unlikely to equip teachers with the requisite skills to implement new initiatives.

IX. CONCLUSION

In this study, we argued that providing in-service teachers with training in inclusive education is critical for its successful implementation. However, such training may not be successful if teachers' attitudes are negative toward the inclusion of learners with additional needs. It was, therefore, important to investigate in-service teachers 'attitudes toward the inclusion of learners with additional needs. We have argued that while such information is important for the successful implementation of inclusive education, in South Africa few studies that have looked into in-service teachers' attitudes towards learners with additional needs exist. The gap becomes even wider when it comes to rural areas like Limpopo Province. Our finding is that while there is a popular belief that teachers are generally negative toward the inclusion of these learners, it was not so.

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Active School Transportation Determinants: Political Possibilities for Expansion in São Paulo City

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& Mariana Giannotti Poli USP

ABSTRACT

Recent studies show that inequalities in transport infrastructure negatively impact educational performance. This article presents a model that indicates the factors associated with the adoption of Active School Transportation (AST) for the city of São Paulo. The results of the multinomial logistic regression show how the adoption of active transportation by students is explained by parents' active commuting, car ownership, distance, and indirect route. They also highlight the school bus distribution policy and its risks, considering the competition between school buses and active commuting modes.

Keywords: active modes; school commuting; choice model for transport; origin-destination survey; transport policies.

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Active School Transportation Determinants: Political Possibilities for Expansion in São Paulo City

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ABSTRACT

Recent studies show that inequalities in transport infrastructure negatively impact educational performance. This article presents a model that indicates the factors associated with the adoption of Active School Transportation (AST) for the city of São Paulo. The results of the multinomial logistic regression show how the adoption of active transportation by students is explained by parents' active commuting, car ownership, distance, and indirect route. They also highlight the school bus distribution policy and its risks, considering the competition between school buses and active commuting modes.

Keywords: active modes; school commuting; choice model for transport; origin-destination survey; transport policies.

I. INTRODUCTION

Recent studies show that inequalities between transport and educational infrastructure are mutually related. School transport options are vital to ensure greater equality in educational opportunities for diverse groups. Education and transportation are essential public services, part of universal and fundamental human rights, and therefore, the analysis of the link between those services must be intensified and deepened (Moreno-Monroy, Lovelace, & Ramos, 2018).

The adoption of active transport modes to school, known as Active School Transportation (AST), is correlated with stronger academic performance, higher levels of attention, and better mental health (Stewart, Moudon, & Claybrooke, 2014; Singh, Uijtdewillingen, Twisk, Mechelen, &

Chinapaw, 2012; Souza et al., 2019; Buttazzoni, Van Kesteren, Shah, & Gilliland, 2018). Furthermore, it is associated with the development of children's ability to move independently in the city, improving spatial notion, resilience, and the use of strategies to deal with risk (Sá, Rezende, Rabacow, & Monteiro, 2016; Babb, Olaru, Curtis, & Roberton, 2017; McDonald, 2008a).

Also, more active children have less propensity to obesity or high body fat. These children usually have lower blood pressure and a higher level of protective heart lipoproteins than those less active. AST Children have also better cardiovascular fitness, lower risks of metabolic syndrome, diabetes, osteoporosis, and cardiovascular disease (Chillón, Evenson, Vaughn, & Ward, 2011; McMillan, Day, Boarnet, Alfonzo, & Anderson, 2006; Souza et al., 2019; Ferrari, Victo, Ferrari, & Solé, 2018; Murtagh, Dempster, & Murphy, 2016). Furthermore, AST increases the possibility of including other moderate or intense physical activities in the routine, reinforcing the benefits of physical activity (Babb, Olaru, Curtis, & Roberton, 2017; McDonald, 2008a; Panter, Jones, & Sluijs, 2008). Researchers suggest that physical activities habits developed in childhood increase individual's chance of being an active adult if continued at school age (Telama et al., 2005; Shaw et al., 2015; Wen et al., 2008; de Rezende et al., 2014).

This article presents a multinominal logit model estimating the association between different classes of variables and the likelihood of AST adoption. Using those results we propose policies to encourage walking and cycling to school

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commuting. The paper is organized in six sections, including this introduction. The second section presents how scholarship define factors that might explain mode choice to school commuting. The third section explains the model and the data used to analyze São Paulo case. The results of the model are discussed in the fourth section. The fifth section discusses policies implemented, followed by the strengths and weaknesses of the model. Finally, the conclusion summarizes the main contributions of this article.

II. WHAT DO WE KNOW ABOUT ACTIVE COMMUTING TO SCHOOL

Researchers have identified several factors influencing school commuting choice. Before implementing the analysis of determinants for the case of São Paulo, we revise the evidence in other countries/cities and the previous evidence for São Paulo. We divide the analysis into two main categories: i. individual factors and ii. environmental factors. The first category is divided into three attributes: a) caregiver; b) student; and c) household. The second category includes attributes of a) urban form (especially the route); b) destination (in this case, the school); and c) the social environment.

2.1 Individual Factors

2.1.1 Students' Caregivers

Children's caregivers' characteristics, such as place of birth (Lee, Yoon, & Zhu, 2017) and education (Ermagun & Samimi, 2015; McMillan, 2003; Yang, Abbott, & Schlossberg, 2012; Ramírez-Vélez, et al., 2016), especially from the mother (Santos et al., 2010; DeWeese, Yedidia, Tulloch, & Ohri-Vachaspati, 2013), interfere with the mode choice. Liu, Ji, Shi, He, & Liu (2018) shows that in China parents with graduation or higher levels of education are more likely to walk to take their children to school rather than biking. Caregivers' transportation mode is highly correlated with children's mode choice in the United States (McMillan, Day, Boarnet, Alfonzo, & Anderson, 2006) and Australia (Wen et al., 2008). Mother working out of home reduces the odds of active mode choice to school commuting,

while father working out of home increases it in the United States (McDonald, 2008b) and China (Liu, Ji, Liu, He, & Ma, 2017). McDonald, Brown, Marchetti, and Pedroso (2011) and Mitra and Buliung (2014) suggest that having an adult who stays at home increases the odds of commuting to school using active transportation modes, as opposed to homes where all adults work, study, or are looking for a job. Jobless parents reduce the odds of walking (Ermagun, & Samimi, 2018), or biking to school (Larouche, Stone, Buliung, & Faulkner, 2016).

Parents' perception of safety can inhibit the adoption of active modes (Kerr et al., 2006; Ferrari, Victo, Ferrari, & Solé, 2018; Rothman, Macpherson, Ross, & Buliung, 2018; Wilson, Clark, & Gilliland, 2018; Royne, Ivey, Levy, Fox, & Roakes, 2016), mainly for girls (McDonald, 2008a). Kerr et al. (2006) found that teenagers with parents with lower concerns about safety, crime, convenience, traffic, quality of sidewalks, commuting time, and distance regarding their child's commuting pattern presented a level of walking or cycling to school 5.2 times higher than parents with medium or higher levels of concern with these issues.

2.1.2 Students

McMillan, Day, Boarnet, Alfonzo, and Anderson (2006) use a survey of children from ten communities in California (USA) to assess differences in the adoption of active modes between genders. The results suggest that boys are more likely to active commuting than girls, in line with other research (McDonald, 2007; Evenson, Huston, McMillen, & Ward, 2003; Silva et al., 2011). However, controlling students' caregivers' mode choice, girls increased the likelihood of adopting active modes (McMillan, Day, Boarnet, Alfonzo, & Anderson, 2006). A study in Espírito Santo State (Brazil) shows that girls walk more to school while boys cycle more (Neto, Eto, Pereira, Carletti, & Molina, 2014).

The scholarship is not conclusive regarding the influence of age on commuting decision. Some studies find a positive relationship when controlling for age: the higher the age, the greater

the likelihood of students using active modes (Pereira, Moreno, & Louzada, 2014; Ito et al., 2017); while others find a negative relationship (de Rezende et al., 2014; Silva, Vasques, Martins, Williams, & Lopes, 2011).

Students spending more time on computer (Dumith et al., 2010) or television (Silva, Vasques, Martins, Williams, & Lopes, 2011), reduces the odds of adopting active modes. Some studies also positively correlate the perception of students' safety with active mode choice (Napier, Brown, Werner, & Gallimore, 2011; Dias et al., 2019; Mendonça et al., 2018).

2.1.3 Households Attributes

Household features such as income (Braza, Shoemaker, & Seeley, 2004; Sener, Lee, & Sidharthan, 2019; Larsen, Gilliland, & Hess, 2012) and vehicle ownership (Rothman et al., 2015; Moran, Plaut, & Baron-Epel, 2016; Woldeamanuel, 2016) negatively influence the adoption of active modes. Bicycle ownership (Liu, Ji, Shi, He, & Liu, 2018); family size (Wilson, Marshall, Wilson, & Krizek, 2010; Woldeamanuel, 2016); and the presence of older people (Liu, Ji, Liu, He, & Ma, 2017) positive impact active mode choice.

The number of children in the family reduces the odds of bicycle adoption and has a positive impact on car adoption; the greater the number of children in the household, it is more likely that the child will commute to school by car since it is more difficult to accommodate them on a bicycle (Hasnine, Lin, Weiss, & Habib, 2018).

The difference between child's and adult's schedules, with different departure times, positively influences the adoption of active modes for school transportation (Liu, Ji, Liu, He, & Ma, 2017), as suggested by Mitra (2013).

2.2 Environmental Factors

2.2.1 Built environment

City attributes are also included in some models. Population density (Ewing, Schroeer, & Greene, 2004; Sener, Lee, & Sidharthan, 2019); and mixed land use (McMillan, 2007; Larsen, Gilliland, &

Hess, 2012; Dias et al., 2019) have a positive impact on the likelihood of active mode choice in commuting to school. Several studies find a negative relationship between rural areas and the adoption of active modes in comparison with urban areas (Murtagh, Dempster, & Murphy, 2016; Pabayo, Gauvin, & Barnett, 2011; Jones & Sliwa, 2016).

Ewing, Schroeer, and Greene (2004) define the concept of a "poor walking environment": characterized by low density, little mixed land use, long blocks, incomplete sidewalks, and other obstacles of uncontrolled urban expansion, favoring the use of the car and discouraging walking and cycling. Some of these characteristics were analyzed individually by other articles such as:

- Sidewalk connectivity (Timperio et al., 2006; Rothman, To, Buliung, Macarthur, & Howard, 2014);
- Availability of bicycle infrastructure (Gao, Chen, Shan, & Fu, 2018; Kerr et al., 2006; Lee, Yoon, & Zhu, 2017; Dias et al., 2019), including bicycle racks at the destination (Jones & Sliwa, 2016; Kamargianni, Dubey, Polydoropoulou, & Bhat, 2015); and
- Street connectivity (Schlossberg, Greene, Phillips, & Johnson, 2006; Hume, et al., 2009).

All these characteristics positively impact the adoption of active modes. Only Lee, Yoon, and Zhu (2017) find a negative impact of the availability of bicycle infrastructure on active modes adoption, justifying that most students who used active modes walked, reducing the relevance of bicycle infrastructure.

The presence of paid or voluntary transit agents to help crossings near the school favors active modes (Jones & Sliwa, 2016). Wilson, Marshall, Wilson, and Krizek (2010), find that children in regions with a higher proportion of local streets (excluding highways and interstates) per square kilometer, adopted walking more frequently as their commuting mode. Timperio et al. (2006), Mitra and Buliung (2014), and Ito et al. (2017) show that the presence of highways or crowded

roads in the child's route inhibited active modes. Larsen, Gilliland, and Hess (2012) and Dias et al. (2019), following the suggestion of Panter, Jones, and Sluijs (2008), find a positive impact the proportion of trees in the child's route on the adoption of active mode in school commuting. In addition to the shade benefits provided by the trees, the authors suggest that this result can be explained by an improvement in the neighborhood's aesthetics, influencing the positive perception of the walking environment and the social environment.

Studies carried out in Brazil (Becker et al., 2017; Silva et al., 2011), United States (Dellinger & Staunton, 2002; Napier, Brown, Werner, & Gallimore, 2011), Canada (Buttazzoni, Clark, Seabrook, & Gilliland, 2019; Larouche, Stone, Buliung, & Faulkner, 2016), England (DiGuiseppi, Roberts, Li, & Allen, 1998; Chillón, Panter, Corder, Jones, & Van Sluijs, 2015), Ireland (Murtagh, Dempster, & Murphy, 2016), Austria (Stark, Frühwirth, & Aschauer, 2018), Israel (Moran, Plaut, & Baron-Epel, 2016), China (Liu, Ji, Liu, He, & Ma, 2017), Australia (Wen et al., 2008; Timperio et al., 2006) and New Zealand (Ikeda, Hinckson, Witten, & Smith, 2019) found a negative relationship between distance to school and active commuting. Liu, Ji, Liu, He, and Ma (2017) also validated that the greater the distance between the caregiver's work and child's school, the greater the child's odds of adopting AST.

Direction also matters on mode choice. The chance of adopting active modes from school was greater than to school (Marshal et al., 2010; Sirard, Ainsworth, McIver, & Pate, 2005; Herrador-Colmenero et al., 2018). Schlossberg, Phillips, Johnson, and Parker (2005) state that parents reported that they take their children to school by car for convenience and comfort, despite the short distance. However, the way back has an increase in the number of children who adopt active modes, probably due to conflicting with parents' working hours.

Timperio et al. (2006) and Mitra and Buliung (2014) found that more direct routes (measured by the route distance on the road divided by the Euclidean distance) decrease the likelihood of active mode choice for children, in the opposite direction of the scholarship evidence for adults. However, the authors are cautious, highlighting the need for further study, which can indicate a difference between young people and adults (Timperio et al., 2006). Mitra and Buliung (2014) suggest that greater importance is given to route safety or quieter routes, with less weight for connectivity. Ito et al. (2017) calculate such a category as the relationship between the distance of the walking route and the car route, also finding a positive relationship and indicating the possibility of adults and children looking for a less busy route to walk.

2.2.2 School Environment

Some studies sought to understand how school attributes influence the pattern of school mobility. The existence of "magnet school" (outstanding schools) often increase distances from home to school and consequently the mode choice, with the opposite occurring with "neighborhood schools" – confined to a maximum distance from students' home in district's more densely populated (Wilson, Wilson, & Krizek, 2007; Wilson, Marshall, Wilson, & Krizek, 2010; Yang, Abbott, & Schlossberg, 2012).

Braza, Shoemaker, and Seeley (2004) and Kouri (1999) found a negative relationship between the number of students and walking; in contrast, Ito et al. (2017) found a positive relationship. AST is positively correlated with public school students compared to private school students (Silva & Lopes, 2008; Sener, Lee, & Sidharthan, 2019; Woldeamanuel, 2016). Pereira, Moreno, and Louzada (2014) found a higher prevalence of active modes in schools located in the suburbs studying in the morning or at night (as opposed to studying in the afternoon). The provision of materials promoting AST (Jones & Sliwa, 2016; Lee, Yoon, & Zhu, 2017) or maps with routes for students and guardians was positively associated with the use of active modes (Royne, Ivey, Levy, Fox, & Roakes, 2016).

2.2.3 Social Environment

The scholarship documents a positive association between social interaction and active mode

choice. Ikeda, Hinckson, Witten, & Smith (2019), McMillan, (2007) and Hume et al. (2009) find this association using as the independent variable the likelihood of interaction with other children. Timperio et al., 2006 and Moran, Plaut, & Baron-Epel, (2016) confirm this association using a quantitative measurement of children in the neighborhood who could play with each other.

Other external environmental factors like climatic conditions such as rain, winds, and very high or very low temperatures also have relevance in active mode choice (Herrador-Colmenero et al., 2018; Kamargianni, Dubey, Polydoropoulou, &

Bhat, 2015; Larouche, Stone, Buliung, & Faulkner, 2016). For children aged 5-6 years, as the route gets steep, the odds of adopting the active mode decreases (Timperio et al., 2006).

III. MATERIALS AND METHODS

3.1 Empirical Strategy

The model estimates the probability of a student choosing the active mode (Pa), conditional on factors discussed in the last section. The model can be specified as:

$$P_a = \frac{exp(U_a)}{\sum_{m \in M} exp(U_m)} \tag{1}$$

Where Ua is the utility derived by the user from using an active mode defined as:

$$U_a = \alpha + \beta PAR^h + \gamma STU^h + \theta HOU^h + \delta ENV_a^{ij} + \psi COST_a + \varepsilon_a \tag{2}$$

where is a constant; PARh the caregivers' attributes; STUh the attributes from the student who resides in the household h; HOUh the housing's attributes; ENVaij the built environment, in this case, characteristics of the route from i to j; COSTa the monetary mode cost variable; and a a mode-specific error vector. Each characteristic has variables for its composition, as explained in Table 1. The table also shows the expected signal for the coefficient concerning active transport. , and represent vectors with the coefficients for each respective variable.

Table 1: Composition of variables with expected associations for AST

Characteristics	Variables	Description	Expected association
		Individual factors	
PAR^h	Active Transport Adoption	Not adopted	0
		Caregiver or spouse adopted active mode at least once	+
	Spouse	No spouse	0
		With spouse	-
	Education	Caregiver and spouse without a university degree	0
		Caregiver or spouse with a university degree	-
		Caregiver and spouse with a university degree	-
	Employment status	Caregiver and spouse jobless	0
		Caregiver and/or spouse with employment at home	-
		Caregiver or spouse with a job outside the home	-

Characteristics	Variables	Description	Expected association
		Caregiver and spouse with a job outside the home	-
STU^h	Sex	Female	o
		Male	+
	Age	Increasing value	+
HOU^h	Log(income)	Increasing value for family income log	-
	Dummy for car or motorcycle ownership	Without possession	o
		Possession of one or more car(s) or motorcycle(s)	-
	Dummy for bicycle ownership	Without possession	o
		Possession of one or more bicycles	+
	Brothers	No brothers	o
		Presence of brothers	+
Environmental factors			
ENV_a^{ij}	Distance	Increasing value	-
	Direction	To school	o
		From school	+
	Indirect route	Route distance divided by Euclidean distance	-
$COST_a$	Cost	Estimated cost for different modes	+

Some assumptions about errors must be included to compose the model. First, errors are independent: the error terms follow a univariate distribution, allowing the calculation of a one-dimensional integral to compute the probabilities. This means that the usefulness of an alternative's unobserved component is not related to the same as another alternative (Train, 2002). Second, the errors follow a Gumbel distribution (Croissant, 2012). Finally, the errors are homoscedastic, i.e., identically distributed (Croissant, 2012). From these hypotheses, it is possible to obtain the usual logit model, as shown by Croissant (2012) and Train (2002).

The estimates were made with the R-Studio program, using the Apollo, package developed by Hess and Palma (2019a). Three types of variables are specified:

- x_{ij}: specific alternative variables with a generic coefficient;
- z_i: specific individual variables with specific coefficients for alternatives; and
- w_{ij}: specific alternative variables with specific coefficients for alternatives.

From this definition, the deterministic component of the utility for an alternative will be estimated by:

$$U_{ij} = \alpha_j + \sigma x_{ij} + \phi_j z_i + \varphi_j w_{ij} \qquad (4)$$

The focus of the analysis will be to model the difference between alternatives, for example, between the walking alternative (a) and the car alternative (c), which will be given by:

$$U_{ia} - U_{ic} = (\alpha_a - \alpha_c) + \sigma(x_{ia} - x_{ic}) + (\phi_a - \phi_c)z_i + (\varphi_a w_{ia} - (\qquad (5)$$

and therefore, the coefficients of the specific individual variables, including the intercept, must be specific for alternatives. Otherwise, they would disappear in the differentiation.

Coefficients and significance levels do not provide information for policies to indicate which factor is most influential; they only highlight the association between variables. The percentage of change in odds, on the other hand, expresses the magnitude of the effect of each model variable on modal choice, with everything else held constant (McMillan, Day, Boarnet, Alfonzo, & Anderson, 2006). An essential part of the analysis will be, therefore, to calculate the chance of the active mode being chosen over the car, according to a particular variable, obtained directly from the exponentiation of the coefficients found (Fávero, 2015).

$$oddsY_{ia}=1=exp Z_{ia} \qquad (6)$$

3.2 Empirical analysis in a South-hemisphere city: São Paulo

Despite the almost universalization of primary education – in 2016, 96% of adequate age

children were properly enrolled in Brazil – many problems persist. For example, this figure does not consider the high rates of age-grade distortion and dropout levels. In high school, only 82.6% of students are adequately enrolled (Pepe, 2017).

The lack of income, the unavailability of schools close to the student's home, and the transportation service's inefficiency correspond to 38% of the reasons for school dropout (Pepe, 2017). In an attempt of avoiding this issue, two main programs were created, willing to provide conditions for children to get to schools without facing difficulties related to distance or costs: the Free of Charge School Bus (TEG in Portuguese) and the Student Free-Pass (PLE in Portuguese), that will be better discussed in the policies section (6).

Brazilian education is divided into basic and higher education. Basic education, in turn, is divided into three categories (Table 2):

Table 2: Division of basic education in Brazil

School stage	Expected age range	Minimum duration
1) Kindergarten	Up to 5 years old	
1.1) Daycare	Up to 3 years old	
1.2) Preschool	4 and 5 years old	
2) Elementary and middle[1]	Up to 14 years old	9 years
2.1) Elementary	From 6 to 10 years old	5 years
2.2) Middle	From 11 to 14 years old	4 years
3) High	From 15 to 17 years	3 years

Source: adapted from Ministry of Education (2006), Federal Senate (2005).
Note: the dataset included one year for each stage

According to the School Census of 2010, there were 10,251 schools in the Metropolitan Region of São Paulo, 54% public (22% in state schools and 32% in municipal schools) and 46% studying in private schools. Students from public schools are

usually assigned to schools closest to their home or their caregivers' work, and high school students can apply for a place in another school with a valid justification and subject to availability (Moreno-Monroy, Lovelace, & Ramos, 2018).

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[1] Before 2006 the minimum duration was eight years (Federal Senate, 2005), being changed with Law nº 11,274, February 2006 (Civil Office of the Presidency of the Republic, 2006).

The variables of mode choice and socioeconomic characteristics were based on the household survey carried out by Metrô called OD Survey (Origin and Destination). Households are randomly selected in the Metropolitan Region of São Paulo. Each household resident is asked about the trips made on the previous day (indicating duration, point of origin and destination, and the reason for the trip) and their characteristics (such as age, gender, income, educational level, and occupation, among others). We work just with São Paulo City, that is the main subject of our analysis since the transport policies (such as TEG and PLE) analyzed in this paper are restricted to the central municipality.

Only Elementary and Middle School students from public schools were selected for this analysis. For each educational category, students within the age group were selected according to Table 2, adding one year at the end of each category, avoiding the exclusion of students who entered the correct age but had a birthday throughout the year.

Only origin or destination trips whose motivation was related to education were used in the analysis, as the objective of the work is to formulate policies that encourage the adoption of AST. All sample adjustment are detailed on Figure 1.

The OD survey does not allow to verify if all the modes are available for a given individual; it only identifies which one was chosen, classifying the model specification as revealed preference. For this reason, an assumption that all modes are available at the moment of choice was made, simplifying the counter-factual elements necessary to carry out the analysis, which is plausible considering the aggregation of modes of transport carried out. It was also considered that the choices are mutually exclusive: when choosing a transport mode, the traveler could not choose another. Consequently, it was used the variable obtained directly from OD Survey, the main mode, that defines a hierarchy according to the carrying capacity, given in descending order: 1) metro, 2) train, 3) bus, 4) chartered transport, 5) school transport, 6) taxi, 7) driving a car, 8) car passenger, 9) motorcycle, 10) bicycle, 11) others, and 12) on foot (Metro São Paulo, n.d.; Metropolitan Transportation Planning and Expansion Board, 2008). For example, if someone uses both the taxi and the subway, the subway will be considered the main mode.

The package Stplanr from R-Studio was used to calculate the distance between the origin and destination of each trip. The package calculates the shortest car route using the OpenStreetMap base. Only trips that allowed the route calculation and that contained the main mode remained in the base, totaling 23 missings in 2007 (from 10,330) and 22 in 2017 (from 8,420). All can be seen in Figure 1.

OD 2007

n = 196,698
→ Elementary and Middle
n = 20,373
→ Origin/destination reason: Education
n = 17,468
→ Live in São Paulo city
n = 12,120
→ Age adjustment
n = 10,330
→ Missings: no route or no main mode
n = 10,307
→ Public school
n = 6,861
→ Division by educational category

Elementary
n = 2,939

Middle
n = 3,922

OD 2017

n = 183,092
→ Elementary and Middle
n = 17,328
→ Origin/destination reason: Education
n = 15,475
→ Live in São Paulo city
n = 9,552
→ Age adjustment
n = 8,420
→ Missings: no route or no main mode
n = 8,398
→ Public school
n = 5,399
→ Division by educational category

Elementary
n = 2,760

Middle
n = 2,639

Figure 1: Adjustments to the OD survey bases (2007 and 2017)

IV. RESULTS

39,4% in 2007 and 41,1% in 2017 of the students' caregivers cycled or walked the day before the survey. In general, the highest educational degree was Elementary in the survey sample of 2007 and High School in 2017's survey, for both parents. Usually, one caregiver work predominantly out of the home – the one who is the financial responsible – while the other do not have a job, for the two years analyzed. In 2007, 26.9% of families did not report the presence of spouses, a figure that grew to 28.8% in 2017.

Most students were in Elementary school in 2007 (56.1%), while in 2017, the distribution started to be equal between the two levels of education. The average age was ten years in both periods in the survey sample. Despite the differences showing a non-linear behavior (Figure 2), it was impossible to model distance categories, using the continuous variable instead.
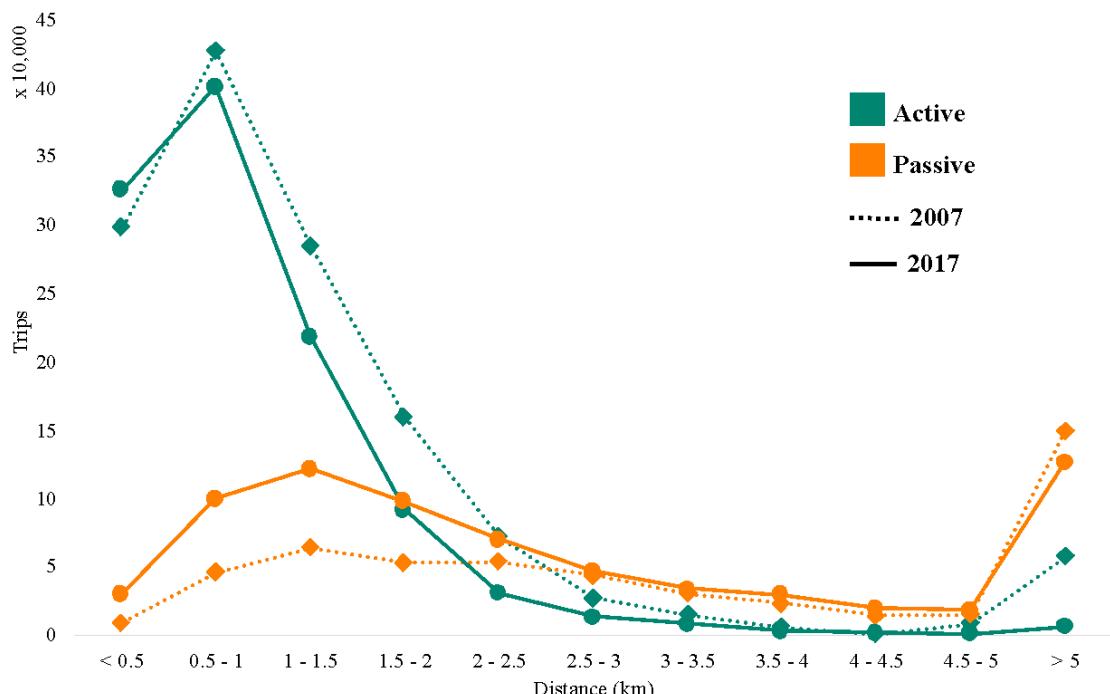
Figure 2: Distribution of trips between active and motorized by distance
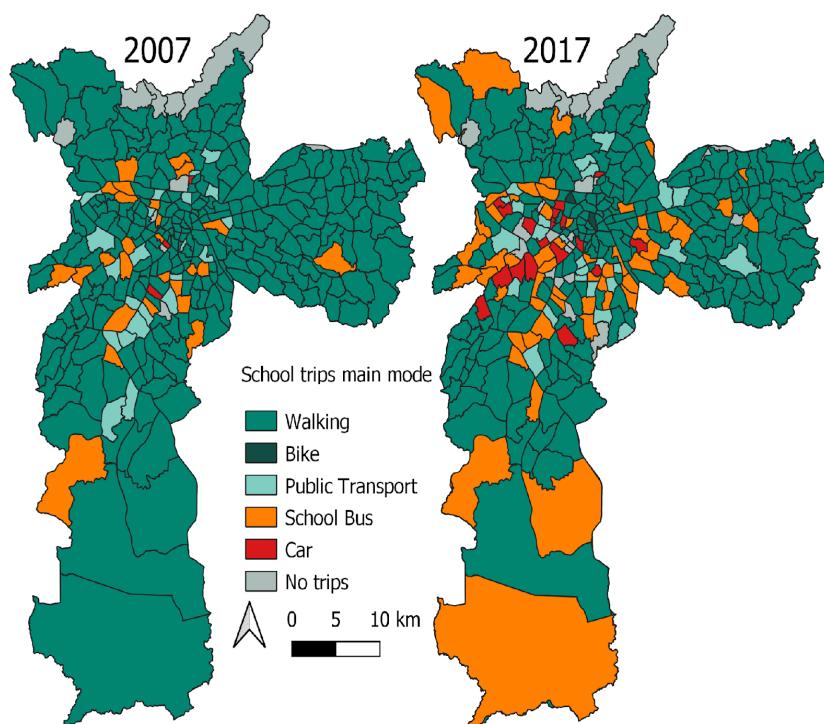
Figure 3: Distribution of school trips by main mode

Figure 3 presents the main school trip mode by zone OD (classification used by Metrô). The increase in car and school bus use between 2007 and 2017 is noteworthy.

Most students are male, but the difference is timid (50.3% in 2007 and 52.3% in 2017). The family's average income in 2007 and 2017 was BRL 1,677.83 and BRL 2,891.57, respectively, nominal terms. Car ownership increased 13.5% in the period, while bicycle ownership fell 18.4%. Most families have more than one child, although there was a 10.0% drop in the proportion of families with more than one child between the two years analyzed.

The average travel distance decreased between 2007 and 2017, from 3.1 kilometers to 1.9 kilometers, and the distance between home and school dropped from 2.9 km to 1.9 km. Figure 4a presents the results of the logistic regression for Elementary Schools while Figure 4b presents the results for Middle School.
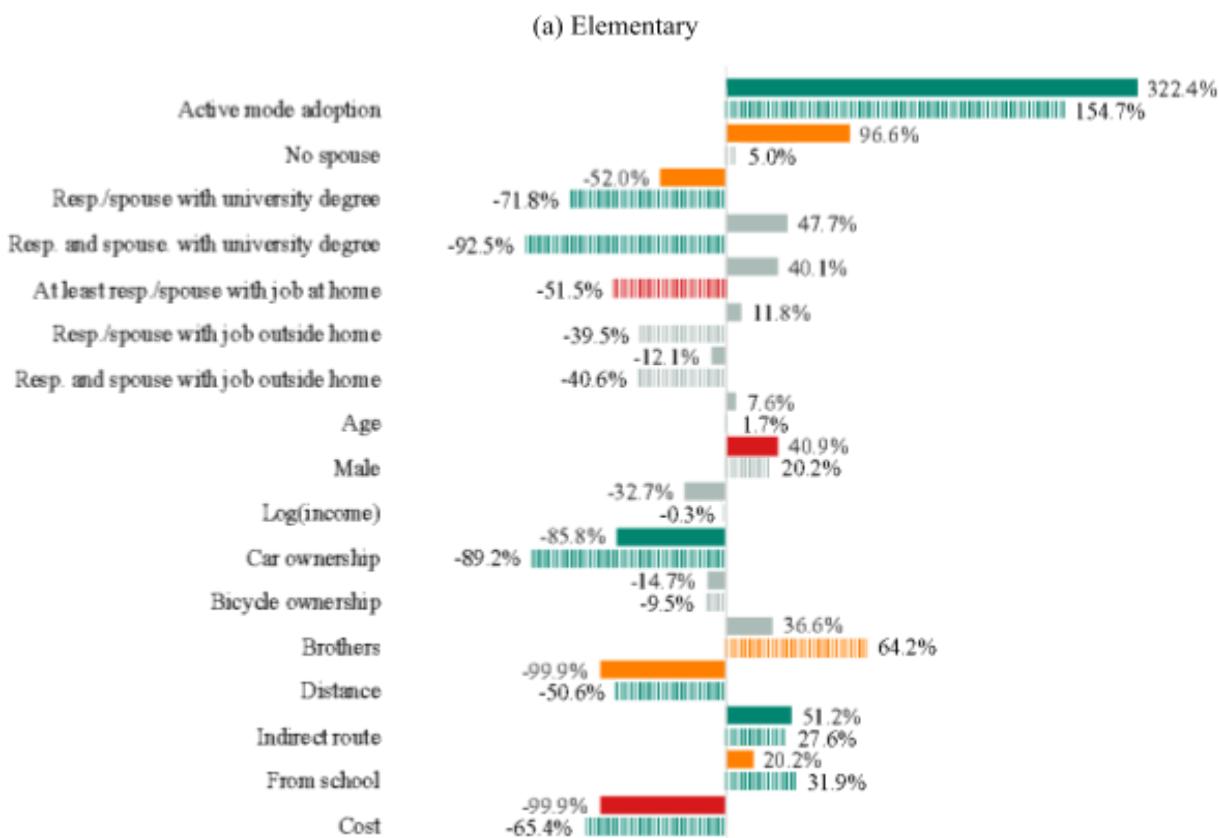
Figure 4: Odds for use of active mode for school trips

The Table in the Supplementary Material presents the coefficients, standard deviation, and p-value for each education category in 2007 and 2017. Coefficients and significance levels only highlight the association between variables, not representing which factor is most influential. So, the analysis focus on analyzing the percentage of change in the chance of adopting the active mode for each variable, all else being constant (McMillan, Day, Boarnet, Alfonzo, & Anderson, 2006), as shown in Figure 4. All results are evaluated according to the motorized private transportation, i.e., if there is a variation in the age of students, ceteris paribus, the mode's probability of choosing active transportation in comparison with the motorized private transportation varies towards the coefficient sign.

4.1 Individual Factors

4.1.1 Students' Caregivers

For all groups, the adoption of active transport by those caregivers positively impacts the choice of

walking and cycling (not significant only for Middle School in 2007).

The likelihood to walk or bike to school increases in families without spouses, a result also found by Pabayo, Gauvin, and Barnett (2011), but only significant for Elementary School in 2017. For Middle School in 2007, the likelihood of using active modes to commute to school decreases for families with no spouse.

Having one of the caregiver with a university degree reduces the chance of adopting walking or cycling for all models. Liu, Ji, Shi, He, and Liu (2018) also found this effect for adopting the bicycle as a commuting mode to school, but not for walking. With the caregiver and spouse with a university degree, the probability of walking and cycling to school also decreases, except for Elementary School in 2017, whose effect is positive but not significant. This effect is probably related to other variables not included in the analysis but is showing that walking and biking to school in São Paulo is more prevalent in low income families.

For families whose caregiver and/or spouse has a job at home, the chance of adopting active modes to school decreases for Elementary School in 2007 and Middle School in 2007, with no significant effects for other groups. Having at least one caregiver with job outside the home, does not affect the chances of adopting the active modes significantly. This finding is in line with the literature that are inconclusive for the topic. For example, for McDonald (2008b) and Liu, Ji, Liu, He, and Ma (2017), the mother working outside the home negatively impacts the adoption of active transportation to school, while the father working outside the home positively impacts the likelihood of adopting active modes to commute to school. Additionally, some studies suggest that having an adult who stays at home, compared to homes where all adults work, study, or are looking for a job, increases the chance of walking to school (Mitra & Buliung, 2014; McDonald, Brown, Marchetti, & Pedroso, 2011), while others show that parents without a job encourage less use of walking (Ermagun & Samimi, 2018; Larouche,

Stone, Buliung, & Faulkner, 2016). We found no significance in this variable.

4.1.1 Students

A one-year increase in age significantly impacts the likelihood of walking and cycling to school only for Middle School in 2007, increasing by 25.6%. Previous analyses have not reached a consensus on the subject as well, but the result of the present study follows the trend of most studies (Wilson, Clark, & Gilliland, 2018; Pereira, Moreno, & Louzada, 2014; Ito et al., 2017).

In agreement with other studies (McDonald, 2012; McMillan, Day, Boarnet, Alfonzo, & Anderson, 2006; Sener, Lee, & Sidharthan, 2019), the present work found that male students are more likely to adopt active modes to commute to Elementary School in 2017 and to Middle School in 2007.

4.1.2 Students' Household

For Elementary School in 2017, an increase in the percentage of income negatively impacts the probability of adopting active modes in commuting to school. This result may indicate that one of the reasons that lead to active transport is insufficient income to bear the monetary cost of a motorized commuting. This is a problem: active modes in commuting to school is not a choice but a "lack of choice".

In all regressions, car ownership decreases the likelihood of commuting to school using active modes, in agreement with the literature (Rothman et al., 2015; Moran, Plaut, & Baron-Epel, 2016; Woldeamanuel, 2016).

Bike ownership did not show significant results in any studied groups. For Elementary School in 2007, the presence of siblings increases the chance of adopting active modes by 64.2%.

4.2 Environmental Factors

4.2.1 Built Environment

In 2007, a one-kilometer increase in the route had negatively impacted the chance of adopting the active mode by 50.6% and 84.5% for Elementary

and Middle School, respectively. In 2017, the magnitude was 99.9% for Elementary School and is not significant for Middle School.

The increase in the indirect route index shows positive results for all groups in the adoption of the active mode, not significant only for Middle School in 2017.

In consensus with several studies (Marshal et al., 2010; Wilson, Marshall, Wilson, & Krizek, 2010; Sirard, Ainsworth, McIver, & Pate, 2005; Herrador-Colmenero et al., 2018), trip from school, rather than to school, are more likely to be by walking or cycling.

4.2.2 External Factors

One of the main differentials of the current study was to add the cost of travel as an explanatory variable, as suggested by Panter, Jones, and Sluijs (2008), but not included in any study according to the best of our knowledge. The increase in the cost of travel decreases the adoption of all modes compared to the car for all groups, being not significant only for Middle School in 2017.

V.   STRENGTHS AND LIMITATIONS

This is the first work with data from the municipality of São Paulo, specifically for Students in Elementary and Middle School, to assess factors associated with active transport choice to commute to school. Despite this advance, several variables were not included due to the lack of disaggregated data, mainly on environmental factors, such as density of green space, quality of sidewalks, and quality of intersections. The environment's characteristic included – distance – is noisy, as it is calculated by the shortest car route, which may not represent the route used by the student.

VI.   TRANSPORT POLICIES FOCUSED ON EDUCATION PURPOSE

In an attempt to reduce school dropout, two main programs were created in São Paulo city: the TEG and the PLE. The TEG, on December 22, 2003, through Law 13,697, was created to facilitate public-school students' access to public schools.

Children, who live up to 2 km far from school or have some handicaps are offered a free service of school bus to go and return to school or from after school programs. Drivers may be individuals, legal entities, or linked to cooperatives. Besides the drivers, the kids are also accompanied by a monitor. The supervision of contracts and documentation for drivers, monitors, and vehicles are managed by the Department of Public Transport (DTP, in Portuguese), while the requests made by students and schools are managed by the Municipal Secretary of Education (SME, in Portuguese), together with the Regional Education Boards (DRE, in Portuguese) (São Paulo City Hall, 2018; São Paulo (City), 2003).

For students who do not fit TEG conditions, the PLE program, established in February 2015, provides a total exemption of public transit fares for students in the public school, according to general requirements (Pepe, 2017). The students receive quotas that are provided in the format of a Single Daily Ticket, limited to two blocks of four trips (in up to three hours) per day and vary according to the frequency required by the institution: from five quotas per month (courses with one attendance per week) up to 24 quotas (courses with five attendances per week) (SPTrans, 2015; Legislative Assembly of São Paulo State, 2015). There is a low entry criterion in the PLE, which establishes that students who live only 1 km far from school are eligible.

For Pepe (2017), TEG and PLE are the two most costly programs for the municipal education budget. In addition to the high cost of transportation, there is also the incompatibility problem between the address provided by the family to the Secretary of Education and SPTrans and the real address of the student. To assure enrollment in one of the central schools, the student may provide a "fake" address, attesting that she lives close to the school and thus, is not eligible for the PLE. Later, however, they apply to the PLE program, providing the actual address to SPTrans. Hence, part of the resources must be allocated to check the data provided by students each organization.

Despite these initiatives, further studies should seek to understand the distribution of school transport policy and its risks, considering the competition between mothorized and active modes for this purpose. Policies such as TEG and PLE must be analyzed in depth to assess whether the solution to one problem has not created another problem increasing the use of motorized trips do school.

The present study takes one first step in this direction, seeking to understand which factors explain the adoption of AST in São Paulo city, which could be the target of policies to stimulate it.

The adoption of active transport by student's caregivers has a positive impact on the choice of walking and cycling mode, in line with the hypothesis that active adults induce active young people, posed by literature, but not always proven in studies (McMillan, Day, Boarnet, Alfonzo, & Anderson, 2006).

A topic widely discussed in the literature is the gender gap in modal adoption (McDonald, 2012; McMillan, Day, Boarnet, Alfonzo, & Anderson, 2006; Sener, Lee, & Sidharthan, 2019). These studies and the present one found that being male increases the chance of adopting active transport. This gender bias is a common problem with active transportation in several countries and should be addressed with policies.

An increase in the percentage of income negatively impacts the probability of adopting active modes for Elementary School in 2017. This may mean that one of the reasons that lead to active transport is the insufficient income to bear the monetary cost of a motorized trip. This should be considered carefully, as it could imply that these families can switch to motorized transport as soon as they have enough income (or as soon as the motorized trip is cheaper). As a result, public policy needs to act quickly to seize the opportunity for these families to use active modes not encouraging mode change. Another possibility is that, given an increase in income, families may decide to place their child in a private school, which may increase the commuting distance.

Further studies for more detailed conclusions are essential to understand this crucial factor.

Car ownership decreases the chance of taking the active mode to school, in São Paulo and in many cities. Thus, policies that discourage the purchase and use of cars are always welcome. Increasing taxes on private cars (especially for purchasing a second car), on oil consumption and parking fees in places with more concentrated educational resources and public transit (Liu, Ji, Shi, He, & Liu, 2018) have been suggested as resorts. Although this result seems evident, it cannot be guaranteed a priori that the ownership of a vehicle implies less use of active modes. In principle, people who do not own a vehicle could always opt for motorized modes (for example, buses). Hence, the results reinforce the hypothesis that policies that inhibit car use are welcome.

The higher the indirect route index more likely is the adoption of the active modes. Mitra and Buliung (2014) stated that although a negative relationship between indirect route index and adoption of active modes for adults is expected, children can show different behavior. The authors state that the traffic risks may overlap with the positive perception of connectivity, leading children to adopt more indirect routes, a result also found by Timperio et al. (2006). Nonetheless, more in-depth studies, with more spatially disaggregated data, should better investigate this hypothesis to indicate priority routes to public policies.

The literature review brought a shred of evidence to affirm that a policy for active school transportation must consider the caregivers' standards and perceptions of safety to be effective. However, just changing the parents' perceptions is not enough; policies that improve the safety of the surroundings must also be implemented. Parents interviewed point to the possibility of children going on active transport if trips are made in a group and improving infrastructure for this mean (Schlossberg, Phillips, Johnson & Parker, 2005). Organizing groups to school could be an exciting alternative to be explored in the cases of TEG and PLE for students living less than 2 km far from

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school, together with other policies that consider the factors that influence the AST.

VII. CONCLUSIONS

The developed multinomial logistic regression model for the city of São Paulo, using data from 2007 and 2017 OD Survey, enabled the estimation of the factors associated with the adoption of active modes to commute to school. The results reinforce the results found in the literature for other cities. Based on these determinants, policies and programs that consider the regional characteristics for adopting active transport can be considered (Ferrari, Victo, Ferrari, & Solé, 2018).

The analysis of data for São Paulo indicates the importance of influencing parents' attitudes towards their children. If those caregivers adopt active modes, the chance of their children also adopting increases. This is a critical factor that can be the target of policies: increasing the likelihood of children and adolescents commuting by active modes to school involves changing parents' perception on the subject and their attitude, which may have an impact on the general obesity levels of the population among other health benefits (McMillan, Day, Boarnet, Alfonzo, & Anderson, 2006).

The results also highlight the possibility of conflict between the school transport policy offered by the government and the adoption of the active mode.

ACKNOWLEDGMENTS

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Variables	2007			2017		
	Active	School bus	Public transport	Active	School bus	Public transport
Elementary						
Intercept	2.727	4.041	2.84	5.315	4.225	5.421
	(3.02)***	(3.192)***	(1.863)*	(1.955)*	(1.515)	(1.162)
Active transport adoption	0.935	0.022	0.283	1.441	0.069	-0.046
	(4.522)***	(0.098)	(0.823)	(6.711)***	(0.317)	(-0.145)
No spouse	0.049	0.088	-0.21	0.676	0.62	0.296
	(0.157)	(0.269)	(-0.421)	(2.363)**	(2.197)**	(0.807)
At least responsible/ spouse with job at home	-0.724	-1.141	-0.36	0.338	-0.078	-0.857
	(-1.711)*	(-2.482)**	(-0.561)	(0.88)	(-0.209)	(-1.708)*
Responsible/spouse with job out of home	-0.502	-0.548	-0.595	0.111	0.353	-0.178
	(-1.53)	(-1.53)	(-1.182)	(0.409)	(1.292)	(-0.494)
Responsible and spouse with job out of home	-0.521	-0.056	-1.248	-0.128	0.351	-0.55
	(-1.323)	(-0.133)	(-1.732)*	(-0.405)	(1.119)	(-1.093)
Responsible/spouse with university degree	-1.265	-0.372	-0.269	-0.735	-0.43	0.004
	(-4.284)***	(-1.163)	(-0.427)	(-2.201)**	(-1.321)	(0.011)
Responsible and spouse with university degree	-2.585	-1.817	-0.203	0.39	0.463	-9.563

	(-6.509)***	(-4.249)***	(-0.328)	(0.63)	(0.831)	(-10.485)***
Age	0.017	-0.073	0.183	0.073	0.05	0.072
	(0.237)	(-0.943)	(1.324)	(0.949)	(0.656)	(0.518)
Male	0.184	-0.068	0.483	0.343	0.09	0.245
	(0.926)	(-0.319)	(1.418)	(1.694)*	(0.455)	(0.914)
Log(income)	-0.003	0.152	-0.07	-0.396	-0.294	-0.278
	(-0.038)	(1.126)	(-0.894)	(-1.201)	(-0.885)	(-0.837)
Car ownership	-2.222	-2.143	-2.346	-1.953	-1.653	-2.182
	(-8.215)***	(-7.4)***	(-5.832)***	(-5.19)***	(-4.379)***	(-3.858)***
Bicycle ownership	-0.1	-0.091	-0.448	-0.16	-0.218	-0.024
	(-0.462)	(-0.396)	(-1.263)	(-0.788)	(-1.1)	(-0.086)
Siblings	0.496	-0.045	0.058	0.312	0.015	0.336
	(2.118)**	(-0.187)	(0.153)	(1.388)	(0.072)	(1.134)
Distance	-0.705	-0.699	-0.627	-7.232	-5.99	-5.93
	(-8.888)***	(-8.726)***	(-7.766)***	(-2.077)**	(-1.711)*	(-1.679)*
Indirect route	0.244	0.113	-1.223	0.414	-0.131	-0.547
	(3.257)***	(1.552)	(-4.496)***	(3.581)***	(-1.113)	(-2.621)***
From school	0.277	0.266	0.231	0.184	0.171	0.121
	(3.432)***	(3.318)***	(1.543)	(2.421)**	(2.558)**	(1.26)
Cost	-1.062			-6.536		
	(-8.425)***			(-1.722)*		
Number of individuals	1,437			1,337		
Number of observations	2,939			2,760		
Estimated parameters	52			52		
	-4,074.32			-3,826.17		

	-2,192.39			-1,994.29		
	0.4619			0.4788		
Adj. Rho-square	0.4494			0.4652		
Middle						
Intercept	0.905	9.467	0.928	5.251	9.971	6.686
	(0.589)	(5.262)***	(0.565)	(0.252)	(0.401)	(0.268)
Active transport adoption	0.324	0.002	0.274	0.843	-0.062	0.101
	(1.541)	(0.008)	(1.093)	(1.899)*	(-0.143)	(0.258)
No spouse	-0.327	-0.104	-0.332	0.005	-0.22	0.093
	(-1.154)	(-0.287)	(-1.032)	(0.01)	(-0.403)	(0.15)
At least responsible/ spouse with job at home	-0.916	0.002	-1.212	-0.018	-0.391	-0.322
	(-2.512)**	(0.004)	(-2.655)***	(-0.036)	(-0.626)	(-0.53)
Responsible/spouse with job out of home	-0.106	0.092	-0.294	0.54	0.262	0.178
	(-0.371)	(0.221)	(-0.877)	(1.094)	(0.504)	(0.304)
Responsible and spouse with job out of home	0.072	0.84	-0.129	0.195	0.61	-0.076
	(0.211)	(1.706)*	(-0.328)	(0.452)	(1.291)	(-0.161)
Responsible/spouse with university degree	-1.216	-0.118	-0.428	-0.461	-0.005	-0.205
	(-4.265)***	(-0.281)	(-1.257)	(-0.513)	(-0.006)	(-0.198)
Responsible and spouse with university degree	-2.38	-1.819	-1.23	-0.151	0.19	0.913
	(-6.047)***	(-2.9)***	(-2.981)***	(-0.083)	(0.084)	(0.499)
Age	0.228	-0.309	0.373	0.31	-0.313	0.247
	(2.78)***	(-2.799)***	(4.089)***	(0.559)	(-0.487)	(0.35)

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Male	0.477	-0.173	0.612	-0.014	-0.559	-0.254
	(2.417)**	(-0.644)	(2.649)***	(-0.048)	(-1.697)*	(-0.734)
Log(income)	-0.04	0.062	0.023	-0.56	-0.359	-0.553
	(-0.29)	(0.426)	(0.178)	(-0.362)	(-0.191)	(-0.356)
Car ownership	-2.275	-1.818	-2.001	-2.813	-2.962	-2.821
	(-7.509)***	(-4.947)***	(-5.923)***	(-3.709)***	(-4.107)***	(-3.631)***
Bicycle ownership	-0.144	-0.505	-0.089	-0.274	-0.064	-0.072
	(-0.725)	(-1.845)*	(-0.384)	(-1.098)	(-0.231)	(-0.266)
Siblings	0.184	-0.338	-0.097	0.462	0.361	0.342
	(0.779)	(-1.041)	(-0.36)	(1.397)	(0.955)	(0.836)
Distance	-1.861	-1.804	-1.732	-5.82	-4.608	-4.622
	(-11.735)***	(-11.297)***	(-10.852)***	(-1.354)	(-1.038)	(-1.035)
Indirect route	0.493	0.188	-0.257	0.53	-0.265	-0.622
	(3.971)***	(1.27)	(-1.2)	(1.344)	(-0.597)	(-1.652)*
From school	0.571	0.496	0.573	0.474	0.339	0.369
	(5.489)***	(4.312)***	(4.905)***	(3.425)***	(2.295)**	(2.47)**
Cost	-2.823			-5.127		
	(-11.143)***			(-1.064)		
Number of individuals	1,867			1,268		
Number of observations	3,922			2,639		
Estimated parameters	52			52		
	-5,437.046			-3,658.431		
	-2,180.930			-1,506.258		
	0.5989			0.5883		
Adj. Rho-square	0.5893			0.5741		

Comprehensive Health and Subjectivities of Schoolchildren on the Consumption of Psychotropics and Psychosocial Variables in a Context

Flor Ángela Tobón Marulanda

University of Antioquia Colombia

ABSTRACT

Exploratory-descriptive research with a mixed approach. The techniques were used semi- structured and focus groups. Selection of a sample, N=75 Colombian students object study from grades 6 to 11, affected by violence during 2017 and 2018. The multivariate statistical analysis of the data applied Pearson's Chi squared (Chi2P), P <0, 05 by cut groups, according to the psychosocial variables of communication, functioning and family vulnerability, depression, and suicide. The relevant results indicate a negative communication relationship in the family nucleus (44.4%), poor reading practice (30%) and daily study (34.7%), among others; and, the consumption of alcoholic beverages, marijuana, methamphetamine and poor mental health.

Keywords: psych-didactics, consumption of psychotropics, schoolchildren, health mental, psychosocial variables, public health, public policy.

Classification: FOR CODE: 930402

Language: English

Comprehensive Health and Subjectivities of Schoolchildren on the Consumption of Psychotropics and Psychosocial Variables in a Context

Salud Integral y Subjetividades de Escolares Sobre el Consumo de Psicotrópicos y Variables Psicosociales en un Contexto Social

Flor Ángela Tobón Marulanda

ABSTRACT

Exploratory-descriptive research with a mixed approach. The techniques were used semi-structured and focus groups. Selection of a sample, N=75 Colombian students object study from grades 6 to 11, affected by violence during 2017 and 2018. The multivariate statistical analysis of the data applied Pearson's Chi squared (Chi2P), P <0, 05 by cut groups, according to the psychosocial variables of communication, functioning and family vulnerability, depression, and suicide. The relevant results indicate a negative communication relationship in the family nucleus (44.4%), poor reading practice (30%) and daily study (34.7%), among others; and, the consumption of alcoholic beverages, marijuana, methamphetamine and poor mental health.

This study reveals little understanding of the social realities impact that limit to forge integral permanent human development. This towards the transformation of a more humanistic progressive society that achieve challenges, such as:

1) Build and develop together other public policies that conceive psycho-didactic constructs from young age, and the schoolchildren understand the impact multidimensional of a critical problem of global public health.

2) Innovate the psycho-educational process to expand skills and abilities to young people that allow them to decide and prevent the consumption of psychotropics with more awareness.

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RESUMEN

Investigación exploratoria- descriptiva con un enfoque mixto. Se utilizó las técnicas de una entrevista semiestructurada y grupos focales. Selección de una muestra, N=75 alumnos colombianos objeto de estudio de los grados 6º a 11º, afectados por violencias durante 2017 y 2018. El análisis estadístico multifactorial de los datos aplicó la Chi al cuadrado de Pearson (Chi²P), P <0,05 por grupos de corte, según las

variables psicosociales de comunicación, funcionamiento y vulnerabilidad familiar; depresión y suicidio.

Los resultados relevantes indican relación de comunicación negativa en el núcleo familiar (44,4%), la práctica de lectura (30%) y el estudio cotidiano (34,7%) deficiente, entre otras; y, el consumo de bebida etílica, marihuana, metanfetamina y salud mental.

El estudio revela poca comprensión de las realidades sociales en contexto para forjar el desarrollo humano integral sostenible, hacia la trasformación de una sociedad progresista más humanista y lograr desafíos. Esto hacia la transformación de una sociedad más humanista progresista para lograr retos, como 1) Construir y desarrollar juntos otras políticas públicas que, conciban constructos psico-didácticos para comprender el impacto multidimensional del fenómeno de consumo de psicotrópicos a una edad temprana; un problema crítico exponencial de salud pública global.

2) Innovar el proceso psico-educativo para ampliar capacidades y habilidades a los jóvenes que, les permita decidir y prevenir el consumo de psicotrópicos con más consciencia para contribuir a la estabilidad humana-social y económica.

Palabras clave: psico-didáctica, consumo de psicotrópicos, jóvenes, salud mental, variables psicosociales, salud pública, política pública.

I. INTRODUCCIÓN

La evolución dinámica del ser humano y de la sociedad motiva la reflexión en torno al fenómeno exponencial del consumo de agentes psicotrópicos[1] (APST) a edad temprana. Las variables psicosociales (VPS) que intervienen en este fenómeno as factores de riesgo (FR) que influyen en las dimensiones de tipo psico-afectivo (sentimientos positivos/negativos), deseos, autocontrol, voluntad, autocuidado, autonomía, autoestima, salud integral, Enfermedad Dual

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[1] Cualquier principio activo (molécula química) que estimula o deprime el sistema nervioso central del ser humano.

(SEdP, 2009), entre otros. Estos FR requieren un abordaje transdisciplinar y multicultural conexo a planteamientos de las ciencias biomédicas y las ciencias socio humanísticas. Los jóvenes necesitan comprender, por ejemplo (p. ej.), el cambio fisiológico dinámico y transgeneracional y la renovación de la educación hacia el cambio de conductas y prácticas cotidianas, situación que requiere fomentar el sentido crítico sobre la producción, la comercialización y el consumo de APST para procesar conflictos de impacto multidimensional (García, 2019). A lo anterior se suma la reflexión de Morin (2009) sobre el consumismo:

> *… es una nueva barbarie, de otro tipo, helada, fría… una barbarie que calcula, que ve únicamente la estadística, que no ve las realidades humanas, no ve las personas… ve cantidades, cantidad de dinero, cantidad de producto nacional… Ignora todo lo que no sea cantidad y también ve únicamente la técnica, ve únicamente los medios fríos técnicos de concebir la sociedad… Pero no encuentra un éxito total porque hay una resistencia en la vida cotidiana…*

Este raciocinio reflexivo sobre el impacto multidimensional del consumo de APST por escolares en condiciones de violencias y relación de VPS en una institución educativa (IE) colombiana, plantea causas estructurales probables y variables psicosociales (VPS). Es decir, FR que pueden conducir al consumo de APST y a la farmacodependencia (FD). Este fenómeno exponencial se esparce geográficamente en el ámbito nacional y global como una problemática social y de salud pública (SP) en cada contexto. El cual, plantea retos a la psicoeducación cognitiva (PSEC) que instruya a los jóvenes desde edad muy temprana en el entorno familiar; hacia el logro del bienestar individual y colectivo, sobre la base en la valoración de las subjetividades y fomentar conductas y prácticas de vida saludables de modo permanente en el tiempo (Torres de Galvis et al., 2010; Varela et al., 2007).

El fin común, debe ser la construcción de otras políticas públicas beneficiosas (PPB) que conciban

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aprendizajes cognitivos, centrados en potenciar las fortalezas, p. ej., la armonía del ser humano en equilibrio con el entorno medioambiental en resonancia con la naturaleza. Dichas PPB deben ser orientadas hacia el reto de una económica distributiva para lograr estabilidad humana-social por el desarrollo local y global.

En esta perspectiva, se podría forjar la prevención de las causas estructurales que alteran los ecosistemas internos y externos al ser humano y a la sociedad, como las VPS conexas a violencias contra la población infantil y jóvenes. Al respecto, las autoridades responsables directas (educación, salud, cultura, justicia, entre otras), junto con los académicos, los investigadores y las fuerzas vivas de la sociedad están en deuda con la sociedad.

Las autoridades responsables directas tienen el reto de promover y desarrollar psicopedagogía social desde el aula de clase, aquella que amplíe capacidades y habilidades mediante la formación humanista integral orientada a afrontar y superar adversidades; y, forjar conductas de vida saludables. Se trata de forjar aprendizajes sobre factores protectores (FP) a edad temprana, como principios de posibilidades alternativas[2] (PPA) para el desarrollo humano integral sostenible. Los cuales, se refieren a la necesidad de garantizar las seguridades humanas como son la educación holista, la alimentación, la económica, la social, la soberanía del territorio, entre otras. Estos retos se logran mediante la educación cognitiva temprana que permita el desarrollo humano integral sostenible y ecuánime; una construcción de ciudadanía que admita una subsistencia digna y la prevención de cualquier adicción.

Lo expuesto, acorde a la responsabilidad social de todos, tanto en el ámbito local como global que, en adherencia al pensamiento de los autores consultados sobre la educación holística escalonada. Esta como una caja de herramientas para entrenar y extender el pensamiento

innovador en el día a día, máxime en el proceso de educar niños, niñas y jóvenes, en perspectiva del derecho superior de educar-formar-desarrollar capacidades y habilidades en las adversidades para tejer resiliencia en el ser humano, en la sociedad y en el entorno medioambiental (Tobón, 2019; Pellicer et al., 2016; Vallaeys, 2013; Posada et al., 2014; Rojas, 2013; Tobón et al., 2012; Agudelo, 2010; Echeverry, 2009; Saldarriaga, 2006; Rodríguez y Goldman, 1996; Max-Neef et al, 1986).

El propósito del estudio fue explorar relación de causas estructurales (VPS) conexas al fenómeno de consumo exponencial de APST a temprana edad, este limita fomentar las potencialidades humana para construir capital social estable.

II. ¿PARA QUÉ FOMENTAR LA PSICOEDUCACIÓN COGNITIVA (PSEC) EN MÁS CONSCIENCIA DEL "OTRO"?

La PSEC en clave de comprensión de forjar cambios conductuales escalonados de infantes y jóvenes es una herramienta formativa ideológica en perspectiva de desarrollar capacidades que permitan la introspección de aprendizajes diversos en dialogo de saberes.

Esto implica construir una PPB que forje constructos relevantes prácticos en equipo intersectorial, entre las autoridades responsables directas de educación y cultura; junto con académicos e investigadores de ciencias biomédicas. En este sentido, la PSEC como una PPB, ayuda a innovar la docencia y la investigación, entorno a interrogantes epidemiológicos más rigurosos, conexos a las ciencias socio-humanísticas. En este caso, transferir conocimiento social sobre relación de consumo de APST por escolares y VPS (Fernández, et al., 2017; Claudet et al., 2017; Alzate, 2017; Gómez et al., 2015; Tobón et al., 2013; Tobón y López, 2011; 2010; Atwoli et al., 2011; Banich et al., 2009), p. ej., en los siguientes puntos esenciales:

- Entender lógicas de la cadena del narcotráfico, estas induce cambios complejos a la naturaleza de la relación del ser humano consigo mismo, con el otro y con el todo,

---

[2] Concebidas como todas las acciones y procedimientos que eduquen-formen en el saber hacer del deber ser oportuno y efectivo que ayude al ser humano y a la sociedad a renovar la aplicación cotidiana de los principios y valores universales, como ser justo, solidario, tolerante, sincero, honesto; reparar y no repetir conductas inconvenientes.

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causando crisis en lo bio-psicoactivo, sociocultural y del entorno medioambiental, alterando las conductas de vida, la tolerancia y la convivencia.

- Ejercer autoridad afectuosa y acordar límites desde edad temprana acorde a las normas y a la trilogía en interrelación estrecha entre responsabilidad social-derechos-libertades, buscando el desarrollo humano-sociedad íntegro en familia, instituciones educativas y en los espacios por los que transita el ser humano.
- Desarrollar capacidades y habilidades desde el aula de clase y en espacios notorios que le permita al ser humano expandir su creatividad y productividad, buscando una solución a los conflictos diversos y cómo prevenir la toxicomanía.
- Intervenir, través de la comunicación social, el origen de las causas estructurales que induce a conflictos de intereses y a cambios conductuales, conexos al consumo entre los jóvenes.

III. ACERCA DEL OBJETO DE REFLEXIÓN TEÓRICO-EXPLORATORIO

La reflexión, desde el reto de la exploración académica práctica, parte del interés de promover el significado amplio de la relación de VPS y consumo de APST a edad temprana, una interconexión dinámica que, debería ser la plataforma de la gestión de una PPB sobre la base PSE de forjar más consciencia social de la práctica de los PPA. Teniendo en cuenta que, la PSEC, debe orientar a todos los involucrados, la ruta a seguir para comprender la interrelación entre lo individual- colectivo, lo subjetivo-objetivo. Al respecto, se requiere la creación de escuelas innovadoras que contribuyan al desarrollo industrial de las poblaciones en contextos urbanos y rurales, acorde a las necesidades básicas insatisfechas de los más desfavorecidos, como un FP que evite el consumo de APST a edad temprana.

La innovación del ser humano, basada en los PPA enfocados a crear ciudadanos resilientes, es decir tolerantes y respetuosos del Estado Social de Derecho (ESD), para proteger los derechos fundamentales de los seres humanos y la sociedad. Para lo cual se requiere de PSE basada en las prácticas de las artes, p. ej., la lectura, escritura y oralidad (LEO); un sistema educativo sistemático, mediante los siguientes seis pilares esenciales sostenibles, entre otros:

- El ontológico, en perspectiva de derechos, principios, valores y deberes institucionales.
- El desarrollo a escala humana para satisfacer las necesidades existenciales y axiológicas, hacia la trasformación benéfica de la sociedad.
- El avance sociocultural que estimule el autocuidado, el cuidado de los otros y el todo; en resonancia con la naturaleza.
- El logro de las metas de desarrollo individual-colectivo: la felicidad, la autoestima, la autonomía, la creatividad, la solidaridad y la salud integral para tejer tolerancia y resiliencia.
- La política-económica distributiva, máxime para las poblaciones más necesitadas.
- La armonía del entorno medioambiental por la salud del planeta.
- La construcción del plan de vida individual conexo al plan de desarrollo local y social.

La PSEC de estos seis pilares por todas las escuelas que transita el ser humano a través de la vida, es una opción para ayudar a proteger la salud integral de las niñas, niños, jóvenes y de la población en general; al prevenir el consumo de psicotrópicos, se apoya a su vez, la estabilidad humana-social-económica de modo equitativo. Para potenciar capacidades y habilidades indelebles, sin discriminación a niñas, niños y jóvenes; quienes son sujetos del derecho superior de aplicar los principios universales de la justicia, la transparencia, la solidaridad, la autonomía, el bienestar, la salud integral y la libertad, entre otros. En cercanía a la opinión de ciertos autores consultados, a través de prácticas cotidianas de la LEO, la definición de PPA, valores y la construcción de significados ciudadanos consolidados (García, 2019; Guerra, 2016; Haidar, 20019; Franz, 2015; Vallaeys, 2013; Nussbaum, 2012; Agudelo, 2010; Tobón y López, 2011; Segura, 2000; Bronfenbrenner, 1986; Max-Neef M, 1986).

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El objetivo general de estudio fue promover el pensamiento libre, respetando los derechos de los otros, buscando soportes prioritarios de PPA conexos a la salud y al desarrollo integral sostenible en resonancia con la naturaleza. Es decir, PPA que, faciliten condiciones para forjar conductas de vida digna sólida. En esta visión, el propósito del estudio fue la observación de las realidades sociales de unos escolares y consumo de psicotrópicos.

IV. MÉTODO

Estudio cuanti-cualitativo transversal de corte hermenéutico, dirigido a identificar relación de VPS (suicidio, depresión, funcionamiento y vulnerabilidad familiar, entre otras) y consumo de ASPT. A fin de plantear la necesidad de construir juntos otras PP de psico-educación que ayude a disminuir el crecimiento exponencial del consumo de APST.

4.1 Participantes

Selección incidental de una muestra escolar (N = 35), como una prueba piloto en una IE de la ciudad de Medellín Colombia afectada por diversas VPS (violencias, narcotráfico). A la cual, se aplicó el instrumento de recolección de datos, se realizó los análisis y ajustes pertinentes.

4.2 Procedimiento

Sobre la base de la prueba piloto, el estudio se desarrolló en otra IE semejante, por dos razones básicas: una, se encontró que tenía condiciones más críticas. Dos, las autoridades responsables mostraron más compromiso en acompañar el proceso del estudio.

La muestra seleccionada fue de N = 75 escolares entre 6º a 11º la IE matriculados durante el periodo 2017 a 2018 con mayor vulnerabilidad, según criterios de profesores y la psicóloga.

La explicación del proceso metodológico del estudio a la psicóloga, a la coordinadora de la IE, a los profesores, a los estudiantes seleccionados y a los padres de familia participantes:

- La motivación sobre la participación activa durante el proceso del estudio.

- La solicitud del consentimiento informado y comprendido a cada uno de los escolares seleccionados para participar en el estudio.
- La recolección de la información en el aula de clase de cada uno de los estudiantes seleccionados de los grados 6º a 11º que aceptaron participar en el estudio.
- Las compilaciones de los datos se registraron y se tabularon utilizando el programa Excel®, mediante la elaboración de un diccionario códigos de las variables.
- El análisis cualitativo de los testimonios obtenidos en los grupos focales, usó el programa de cómputo Atlas-ti 2018.
- El análisis cuantitativo de los datos usó el paquete estadístico IBM SPSS, Versión 22, 2017.

4.3 Instrumentos

Se aplicaron los siguientes instrumentos para evaluar la relación de VPS y consumo exponencial de psicotrópicos, en acercamiento a Kovacs y Beck (1977):

- El instrumento APGAR al núcleo familiar, el cual significa:

(A), adaptación cohesión armónica, uso de recursos para resolver conflictos por pérdidas o estresores en periodos de crisis.

(P), participación desde el grado de comunicación, búsqueda de solución a las dificultades.

(G), ganancia en bienestar al aceptar y apoyar acciones que emprendan para impulsar y fortalecer el crecimiento, personal.

(A), afecto como expresiones de amor, cariño, pena o rabia.

(R), resolución como capacidad de procesar conflictos en el tiempo, espacio y dinero.

La medición de cada uno de los factores del instrumento APGAR, consta de cinco preguntas, cada una con una puntuación entre 0-4 puntos, así: nunca (0); casi nunca (1); algunas veces (2); casi siempre (3) y siempre (4). La valoración final se interpreta entre 0 a 20 puntos para definir VPS como la función familiar adecuada (18-20 puntos); la disfunción familiar leve (14-17);

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moderada (10-13); y la disfunción familiar severa (9 puntos o menos).

- El ISO-30, un análisis Psicométrico del Inventario de Orientaciones. El cual, valora ideas suicidas, como mediciones de desesperanza.
- El CDI-LA (Children's Depression Inventory Latinoamérica), valora el grado de depresión en niños y adolescentes, desde cinco dominios, cada uno relacionado al número de preguntas y el máximo de puntos, así: ánimo negativo (6-12); dificultades interpersonales o inefectividad (4-8); anhedonia, incapacidad de sentir placer (8-16); autoestima negativa (5-10). Para establecer un grado mayor a menor entre alto, moderado o ninguno.

- El CIDI-II, Composite International Diagnostic Interview. Este instrumento clasifica el diagnóstico de consumo, abuso y de farmacodependencia en el último año; el nivel actual de consumo y comorbilidad con otros desórdenes mentales. Validado para Colombia.

V. RESULTADOS

Los resultados corresponden al cruce multifactorial de relación de VPS y consumo de APST en los escolares de los grados 6° a 11° de la IE objeto de estudio. Estos se aproximan a otros estudios realizados en el ámbito local y global (Bravo et al., 2005; Cáceres et al., 2006; Toro et al., 2009; Tobón et al., 2013). Observar Tabla 1.

Tabla 1: Prevalencia de interrelación VPS comunicación y nivel escolar

VPS	Nivel FR	% según grado escolar			Chi² Pearson	
		6 - 7	8 - 9	10 - 11	Val.	sig[5].
No aceptación del grupo de amigos	Alto	30 (n=6)	50 (n=10)	20 (n=4)	9,7	0,048
	Medio	42,9 (n= 3)	28,6 (n=2)	28,6 (n=2)		
	Bajo	21,7 (n=10)	21,7 (n=10)	56,5 (n=26)		
No tengo confianza en mí	Alto	16,7 (n=4)	33,3 (n=8)	50 (n=12)	9,9	0,043
	Medio	45,8 (n=11)	12,5 (n=3)	41,7 (n=10)		
Me siento extraño con los demás	Alto	42,1 (n=8))	42,1 (n=8)	15,8 (n=3)	11,6	0,022
	Medio	38,5 (n=5)	23,1 (n=3)	38,5 (n=5)		
	Bajo	14,6 (n=6)	26,8 (n=11)	58,5 (n=24)		
Los profesores no entienden las dificultades	Alto	36,4 (n=8)	45,5 (n=10)	18,2 (n=4)	15,1	0,005
	Medio	42,9 (n=6)	28,6 (n=4)	28,6 (n=4)		
	Bajo	13,5 (n=5)	21,6 (n=8)	64,9 (n=24)		

Fuente: base de datos del estudio. FR: factor de riesgo. Nivel FR factor de riesgo): valor alto entre cuatro a cinco (4-5). Medio: valor de tres (3). Bajo: entre uno y dos (1-2). Val: valor. El 5: valor de significancia estadística igual o menor a 0,005 que comprueba la hipótesis alterna.

La Tabla anterior registra el análisis estadístico multifactorial inferencial de 180 VPS, por grupos de corte, según el sexo, edad, nivel escolar y el estrato socioeconómico, cuya significancia estadística es de $P<0,05$, mediante la Chi cuadrado de Pearson (Chi² P), que permite aceptar la hipótesis alterna de las VPS relevantes agrupadas en FR para la salud mental. Se observa prevalencia de FR de medio a alto, asociado a relaciones comunicativas por nivel escolar, así: los niveles entre 8° y 9° presentan frecuencia mayor (50%), el no ser aceptado por el grupo de amigos frente a los estudiantes de 6° y 7° y de 10° y 11°. En contraste, los escolares de 10° y 11° muestran FR mayor (50%), el no tener autoconfianza.

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La Tabla 2 muestra la prevalencia de consumo APST, FR y nivel escolar. Los escolares de 10° y 11°, refieren que el 51,8% consumen bebidas etílicas, y nicotina (tabaco), el 56,1%. Este FR crece cuando se reúnen con amigos a consumir en las esquinas del barrio que habitan (38,5%).

Tabla 2: Prevalencia interrelación VPS conducta de consumo APST y grado escolar

Consumo de APST	Nivel FR	Porcentaje según grado escolar			Chi² Pearson	
		6-7	8-9	10-11	Valor	Sig5.
Me reúno con amigos en la esquina y consumo	Alto	26,9 (n=7)	34,6 (n=9)	38,5 (n=10)	12,6	0,014
	Medio	83,3 (n=5)	0 (n=0)	16,7 (n=1)		
	Bajo	17,1 (n=7)	31,7 (n=13)	51,2 (n=21)		
Mis amigos consumen bebidas etílicas.	Alto	19,6 (n=11)	28,6 (n=16)	51,8 (n=29)	9,5	0,050
	Medio	36,4 (n=4)	36,4 (n=4)	27,3 (n=3)		
	Bajo	66,7 (n=4)	33,3 (n=2)	0 (n=0)		
Mis amigos consumen tabaco	Alto	9,8 (n=4)	34,1 (n=14)	56,1 (n=23)	13,8	0,008
	Medio	37,5 (n=3)	25 (n=2)	37,5 (n=3)		
	Bajo	50 (n=12)	25 (n=6)	25 (n=6)		

Fuente: base de datos de la investigación

En la tabla 3, se indica que los escolares participantes de los grados 10° y 11° en el estudio, tienen una conducta alta (62,8%) de consumo de bebida etílica en las reuniones familiares; (60%) o por invitación de amigos mayores que consumen en el colegio o en el barrio. Los escolares de 6° y 7° (59,6%) revelan romper las normas para escaparse de la casa a consumir bebidas etílicas, un FR alto que puede influir en actos inadecuados.

Tabla 3: Prevalencia VPS conducta consumo de bebida etílica y el nivel escolar

VPS conducta	Nivel FR	Porcentaje según grado escolar			Chi² Pearson	
		6-7	8-9	10-11	Valor	Sig5.
Mis amigos la consumen.	Alto	11,6 (n=5)	25,6(n=11)	62,8 (n=27)	11,518	0,021
	Medio	33,3 (n=1)	33,3 (n=1)	33,3 (n=1)		
	Bajo	75,0 (n=3)	25 (n=1)	0 (n=0)		
Se consume en reunión familiar.	Alto	10 (n=3)	30 (n=9)	60 (n=18)	10,595	0,032
	Medio	0 (n=0)	50 (n=3)	50 (n=3)		
	Bajo	42,9 (n=6)	7,1 (n=1)	50 (n=7)		
Me escapo de casa para ir a tomar.	Alto	100 (n= 2)	0 (n=0)	0 (n=0)	14,539	0,006
	Medio	100 (n=1)	0 (n=0)	0 (n=0)		
	Bajo	12,8 (n=6)	27,7 (n=13)	59,6 (n=28)		

Fuente: datos del estudio. Sig.: significancia de la estimación estadística igual o menor a 0,05 que comprueba la hipótesis alterna.

Por su parte, los escolares de 10 a 17 años revelan ser más frágiles al FR de alto consumo de APST en familia, como el Tetrahidrocannabinol (THC) sin adulterar, (36,4%); THC adulterado (cripa), el

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50%; Cocaína el 66,7%; la Dietilamida de Ácido Lisérgico (LSD) y la Feniletilamina (2-CB) en una prevalencia del 50%, respectivamente. Observar la Tabla 4.

Tabla 4: Prevalencia VPS consumo de APST y etapa adolescente

Consumo de APST	Etapa Adolescencia[1]	% según etapa adolescente		Chi² Pearson	
		SI	NO	Val.	Sig[2].
THC convencional.	Primera	36,4 (n =4)	8,7 (n=2)	4	0,048
	Segunda	8,7 (n=7)	91,3 (n=21)		
Tetrahidrocannabinol adulterado[3] (cripa).	Primera	50 (n=4)	11,5 (n=3)	5,6	0,019
	Segunda	50 (n=4)	88,5 (n=23)		
Ácido lisérgico Dietil-Amida (LSD).	Primera	50 (n=2)	11,5 (n=3)	3,7	0,050
	Segunda	50 (n=2)	88,5 (n=23)		
Feniletilamina (2-CB)[4]	Primera	50 (n=2)	11,1 (n=3)	3,9	0,048
	Segunda	50 (n=2)	88,9 (n=24)		
Cocaína.	Primera	66,7 (n=2)	11,1 (n=3)	6	0,014
	Segunda	33,3 (n=1)	88,9 (n=24)		

Fuente: datos del estudio. Número 1: indica la categoría, primera etapa de diez a trece años (10-13), segunda etapa de catorce a diecisiete años (14-17). Val.: valor. El 2: estimación estadística significativa, según etapa adolecente que comprueba la hipótesis alterna. El 3: distribución y comercialización clandestina de *Cannabis sativa* con mayor contenido de contaminantes tóxicos al cerebro. El 4: anfetamina sintética con fórmula química 4-Bromo, 2,5-Dimetoxifenile tilamina.

Los escolares consultados de ambos sexos consumen Nicotina (50%), aunque los hombres presentan un FR mayor que los amigos fumen (71,4%), y las mujeres, un 65,2% (Tabla 5).

Tabla 5: Prevalencia de VPS consumo de psicotrópico en el barrio según sexo

APST	VPS	% Prevalencia		Chi² Pearson	
		Hombre	Mujer	Valor.	Sig.
Nicotina (fumar cigarrillo).	Quiero fumar	50 (n=1)	50 (n=1)	6,9	0,032
	Mis amigos fuman	71,4 (n=20)	28,6 (n=8)		
	Ya fumé con amigo	34,8 (n=8)	65,2 (n=2)		
APST clandestino, pepas.	Quiero consumirla	25 (n=1)	75 (n= 3)	5,5	0,050
	Mis amigos las consumen	65,2 (n =15)	34,8 (n=8)		
	Ya consumí con mis amigos	27,3 (n=3)	72,7 (n=8)		

Fuente: datos del estudio. Sig.: significancia de la estimación estadística igual o menor a 0,05, que comprueba la hipótesis alterna.

El estudio revela un consumo alto de las llamadas drogas de diseño (pepas), entre los jóvenes de la IE objeto de observación, un FR muy alto a edad temprana. Observar Tabla 6.

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APST	FR	Porcentaje Prevalencia			Chi² Pearson	
		6-7	8-9	10-11	Valor	Sig.
Feniletilamina 2-CB (anfetamina sintética).	Quiero consumirla	50 (n=1)	50 (n=1)	0 (n=0)	14,7	0,006
	Mis amigos consumen	20 (n=4)	5 (n=1)	75 (n=15)		
	Ya consumí con mis amigos	20 (n=1)	40 (n=2)	40 (n=2)		

Fuente: datos del estudio

VI. DISCUSIÓN

El análisis cuantitativo-cualitativo de este estudio exploratorio se aproxima al de otros estudios similares que evidencian la disposición-práctica exponencial de consumo de APST y VPS en adolescentes escolarizados en sectores periféricos de la ciudad de Medellín (Colombia), en condiciones vulnerables críticas y en América Latina. Esta actitud-práctica globalizada tiene relevancia alta en la necesidad de fortalecer el desarrollo de la PSEC y la psicodidáctica hacia la prevención del consumo de psicotrópicos en lo cotidiano como algo natural.

Situación hoy de notabilidad mayor, la cual, requiere de la búsqueda de PPA que faciliten la evolución del impacto negativo multidimensional del consumo de APST conexo a la salud mental y a las contingencias diversas de la pandemia por coronavírus-19 (CoV-19). Realidades que causan efectos de tipo psicológico, físico, sociocultural, político-económico, tecnológico y entorno-medio ambiental. Estas VPS demandan intervención a través de la PSEC e implantar programas preventivos eficaces permanentes para lograr el reto del nivel deseable de la comprensión de las causas del problema y los responsables directos. Esto en arrimo a un enfoque amplio del panorama mundial (Tobón, 2019; Tobón et tal., 2012; Tobón y López 2011; 210). Teniendo en cuenta, lo transcendental de la evidencia del consumo exponencial de otros APST de más potencia neurotóxica que, permite advertir que los jóvenes de 8° y 9° presentan mayor FR por las siguientes VPS:

- La comunicación negativa en el núcleo familiar: "los padres se confrontan con frecuencia" (44,4%) y el testimonio "*mi casa es un burdel*".
- Las prácticas de lectura y estudio cotidiana son deficientes (el 30% al 34,7%) comparada con hacer tareas vía internet. El uso de la internet para hacer tareas: en los escolares de grados 6° y 7° es del 100%, los de 10° y 11° (46,8%) y los de 8° y 9° (66,7%). Según los jóvenes, en la mayoría de los casos sin el acompañamiento de los padres. Se interroga si los escolares hacen uso apropiado de la internet que les permita aprender en clave de comprensión, si los curadores no ejercen control adecuado.

El 84,2% de los jóvenes de 10° y 11°, si bien valoran la presencia del padre en el hogar, un FP; sin embargo, el 50% se contradicen al considerar la posibilidad de buscar delincuentes para resolver un problema o una conducta punible alta; un FR que, persiste cuando el 44,4% expresan que, si no se resuelve la dificultad, busca otro bandido. Esto sugiere que los jóvenes: 1) no tienen un acompañamiento suficiente. 2) ellos tienen tensiones psicosociales altas. 3) no son capaces de mediar los conflictos por sí mismo, a través del diálogo, lo que los induce a buscar soluciones por la vía de la conducta violenta.

Preocupa la actitud-práctica (FR) de consumo del APST Feniletilamina 2-CB (anfetamina) y la 4 -bromo -2,5- Dimetoxifeniletilamina (2CB) con los amigos del barrio, en especial los escolares del 6°

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y 9° de ambos sexos. Parece, según la observación no participante de los investigadores de este estudio que, los jóvenes ignoran que los APST de diseño (pepas) causan un efecto estimulante potente neurotóxico y cardiotóxico hasta una muerte impredecible a corto plazo. Estos efectos farmacológicos-clínicos se hacen aún más grave cuando se consume la anfetamina 4-Bromo-2,5-Dimetoxifeniletilamina junto con bebida etílica, máxime con bebida etílica adulterada, una interacción farmacológica en la mayoría de los casos fatal.

El análisis de la información cualitativa recolectada durante el desarrollo de 10 talleres, utilizando el Atlas-ti 2018, se compiló en las siguientes diez categorías relevantes cercanas a la realidad cotidiana, cuyas causas son:

- El desaliento, miedos e impotencia.
- El desánimo para asistir a la IE y aprender de las dificultades.
- La deserción, y el sueño de llegar a la universidad se hace muy difícil.
- Los estresores extremos, debido a que fuerzas ilegales obliga a niños y niñas a hacer actos delictivos, ellos tienen pocas oportunidades de: estudiar de forma permanente, tener un empleo digno y estable; muchos tienen hambre. Esta situación crítica, no les permite satisfacer sus necesidades básicas vitales y ayudar a la familia.
- El contexto barrial permite presencia de actores armados ilegales que se disputan el control territorial por las rentas ilícitas del narcotráfico y el narcomenudeo. En ocasiones, su accionar delictivo causa desplazamiento intraurbano y fuera de la ciudad.
- Las niñas, niños y adolescentes son instrumentalizados por grupos delincuenciales que aprovechan las condiciones de vulnerabilidad de las familias disfuncionales y violencia intrafamiliar, donde algunos de lanzan expresiones como: "*mi casa es un burdel*".
- El matoneo en la IE y las autoridades escolares lo controlan poco.
- La adquisición de APST es fácil, dentro y alrededor de la IE, en el barrio e incluso al interior de algunas familias.

- Algunos jóvenes hacen cocteles con varias bebidas etílicas clandestinas de contenido alto de metanol/etanol, como alcohol industrial en gaseosas con otros aditivos, llamados "*chamberlain*" o "*shots*".
- La fuerza pública presta poca seguridad y su presencia cuando se requiere con carácter urgente, en varios casos, no es oportuna e inclusive a veces, algunos agentes de la fuerza pública cohonestan con los actos delictivos en el barrio.

VII. CONCLUSIONES

El valor de este estudio exploratorio académico-social radica en que sus resultados son un substrato inicial para promover la psicoeducación cognitiva para aprender, desaprender y reaprender de las experiencias; una ruta virtuosa de más esfuerzos para una recuperación mancomunado e impedir la trampa de lucro fácil de la cadena del narcotráfico: producción, distribución y comercialización; mediante una política pública beneficiosa[3] (PPB) para todos, sobre la base de constructos, en acercamiento a la opinión de García (2019), como:

- *La instrucción comunicativa a las familias*: para que traten a niñas, niños y jóvenes con dignidad y se forjen vínculos afectivos para tener calidad de vida y una supervivencia digna.
- *La potenciación de la resiliencia[4],* en acercamiento al pensamiento de Ruiz (2015), amplía la mente y permite relación afinada consigo mismo, con el otro y con el todo; una visión futurista de co-crear productividad

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[3] Una BPP efectiva, entendida como aquella que enaltezca la vida y la dignidad humana a través de un modelo educativo, crea capacidades y habilidades humanistas, acompaña en forma afectuosa a los seres humanos en la búsqueda de otras opciones de plan de vida y ofrece condiciones que les multipliquen las oportunidades inclusivas, equitativas y efectivas. Estas deben ser paralelas a los servicios de APS que promocione la salud integral, en especial la salud mental.

[4] Entendida como la educación para crear capacidad de ser protagonista en la búsqueda de PPA y avanzar en el desarrollo, afrontando los problemas y las dificultades, sin dejarse vencer, sino por el contrario, potenciar las experiencias para salir fortalecido.

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psicosis, ansiedad, depresión y hasta el suicidio. Además, patología cardiaca, hepática, entre otras. Dichas patologías pueden ser reversibles e irreversibles hasta causar discapacidad, afectar la calidad y esperanza de vida, el progreso de la sociedad y el avance territorial (Rodríguez y Goldman, 1996; Segura, 2000; Saldarriaga, 2006; Varela et al., 2007; Vallaeys, 2013; Rojas, Ochoa, 2013; Ruiz, 2015).

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Conflicto de interés

los autores declaran no tener algún conflicto de interés.

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Sociological Knowledge: The Double Error of Scientism

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ABSTRACT

One of the issues that has always been discussed when addressing the problem of scientific knowledge in sociology concerns the very tools suitable for knowledge and the consequent technical needs of the researcher: in one term, methodology. We have already had occasion to explain in previous studies (Corposanto 2022 a, Corposanto 2022 b) the proposal of an inclusive sociology, epistemologically tolerant, without any claim to be exhaustive in its space-time arguments (which, moreover, as is clear from particle physics, are themselves social constructions lacking the requirements of objectivity and truth in themselves). A sociology, however, that is open to the versatility of knowledge and the certainty of the absence of linearity in conclusions, to the awareness that there is no true paradigm that does not at the same time presuppose a possible error, and finally that the gaze, albeit fleeting, on the social world must nevertheless try to make the maximum effort to be credible, even before being plausible.

Keywords: scientism, knowledge, methodology, science, research, data.

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I. SCENARIO

In the famous Rede Lecture of 1959, scientist and novelist C.P. Snow (2012) argued that the intellectual world is divided into two parts, the sciences and the humanities, each of which expresses its own culture. Over time, the 'two cultures' become increasingly incomprehensible to each other as they develop. Snow asserted that the future of mankind would therefore depend on the ability of intellectuals to dialogue in such a way as to integrate the two cultures, so that science would once again be characterized by an understanding of the concrete, everyday human condition. What is the state of the art today? The dialogue between the two cultures hypothesized by Snow has only been hypothesized: in fact, there seems to be a close correlation between the ever-increasing decline of the humanities and the uncontrolled growth of a scientistic approach, underpinned by the belief that the model of explanation can be standardized using a single scientific approach. Today, scientism has taken on the characteristics of a veritable ideology, which pervades all the sciences and the most diverse spheres of society: from art history to music; from the field of evaluation to the varied and complex world of education, school and university (Hyslop-Margison & Naseem 2007; Robinson & Schubert 2014; Scruton 2014).

But how did this happen?

Among the many reasons, one can distinguish some more general structural causes related to the historical and social context, and others more specific related to the state of the sciences as a whole and, more specifically, of the humanities.

Regarding the structural causes, it is not so strange that the imbalance between the sciences and the humanities has become more extreme in recent decades. As Giddens (2000) observed, in times of globalization, a whole series of fundamentalisms develop, the expression of those who, disoriented and overwhelmed by change, react with anguish and sometimes violence, rejecting dialogue, cultural diversity and

cosmopolitanism and seeking salvation in clinging to the traditions of the past. But fundamentalism is not confined to religion. Scientism, in this sense, is also to be considered a clear form of fundamentalism (Hyslop-Margison & Naseem 2007).

But let us come to the more specific causes related to the state of science. Scientism is the opium of scientists. It works as a veritable 'agent of removal' (Partial 2015), simplifying reality and eliminating, only apparently, the criticalities linked to the natural complexity of social phenomena. The social sciences, for their part, have found themselves, on the basis of subjective conditions, particularly susceptible to the invasion of scientist ideology (Hyslop-Margison & Naseem 2007). Marradi (2010), for instance, highlights the inferiority complex that has led many social scientists to adopt both vocabulary and epistemology to the method of the natural sciences.

Nevertheless, there are many stances and attempts to react to the pervasiveness of scientist ideology. Among the many stances that have been taken over time in the debate on the subject, perhaps the most cutting is the one that refers to scientism as those "*unfortunate attempts to unduly extend to other fields the intellectual clothes proper to the physical and biological sciences*" (Hayek 1952). Because, as the author himself recalls, the scientist even goes so far as *'to deny the foundation of social science, that is, the existence in the social world of regularities that have matured spontaneously, outside of any programmatic deliberation, through logics that are autonomous from the subjects*' (ibid).

II. METHODOLOGICAL ISSUES

From a strictly methodological point of view, in any case, the question appears interesting above all for what we might call a double error: one entirely conceptual, the other strictly operational.

As far as the first error is concerned, let us try to analyze it from a threefold perspective. Firstly, the epistemological one, which lives in the opposition between absolute and (purely) relative knowledge. To put it with pervasive incisiveness, a perspective

aimed at "*constructing a scientific truth capable of integrating the vision of the observer and the truth of the practical vision of the agent as a point of view that ignores itself as such and tests itself in the illusion of the absolute*" (Bourdieu 2001).

Secondly, there is the ontological question, articulated in the opposition between the classical elements analyzed by the 'hard' sciences (atoms, genes) and those at the center of the social sciences, namely individuals. Only if we understand that knowledge in the social sciences is never absolutely anything other than that particular model that we are able to conceive, institutionalize, use and socialize - and that somehow allows us to come to terms with the reality we live in and within which we live - is it possible perhaps to overcome that dualism that still today tends to kill off a central part of the method proper to the social sciences. Knowledge is, necessarily, always a certain part of reality; temporally and locally determined in each case.

The third aspect is peculiarly concerned with the ethical question, which has many facets. We will mention here one for all and it concerns the relationship that the researcher has with time, understood as a historical moment of life and analysis. This is because all our knowledge is inextricably linked to our evolutionary, social, and cultural experience. And precisely to the extent that we can highlight its peculiar temporal characteristic, it is possible to think of 'generalizing' it to broader and more articulated spheres.

The scientist perspective, in short, precisely because of the epistemological, ontological, and ethical aspects just described results in a gross methodological error for the social sciences.

But as mentioned, this is not the only error. Because we would also like to reflect on another aspect, certainly related to the very function of the discipline considered from a strictly operational point of view, and therefore on the very side of its expendability (and perhaps, incidentally, the most ardent scientists turn out to be those who have never grasped the importance of research not only

aimed at the academy, but contaminated with people, groups, interactions that daily tread the streets of the world). The second big mistake that scientists make is therefore intimately linked to the very way research is done. In the case of the social sciences, for example, it manifests itself in a systematic, exclusive, sometimes even morbid recourse to the classical tools of quantitative analysis and statistics. This tendency is so pervasive and deep-rooted that it even influences the work of those qualitative scientists who, by virtue of a real sense of inferiority (cf. Marradi 2010), seek their own redemption in a clumsy attempt to 'quantitativize' the qualitative.

In fact, from our point of view, the best possible approach is that of an integrated, even doubly integrated perspective.

The first level of integration consists in the removal of the classical alleged problematic nature of the qualitative/quantitative dichotomy. This makes it possible to grasp the essence of things as fully as possible, overcoming the dualism between methodologies so called hard and soft. Exactly as happens, for example, in evaluation processes, where the absence of some important point of view may prove deleterious from the point of view of the result. In fact, therefore, from a strictly operational point of view, the best perspective is that of a qualitative-quantitative integration that thus recovers certain aspects of the use of tools common to all the sciences, where possible, placing them alongside those traditionally belonging to the social sciences. This is how it works, in fact. This is how, in fact, even a good part of the most hardened scientists work, while publicly disavowing this approach.

But as anticipated, there is a second level of integration that, in our opinion (Corposanto 2004), must also be pursued from a further perspective: the intrusive/periscopic one. Because in this way, the triangulation of results will also be done with methods that compensate for their respective criticalities.

A double error, in short, that committed by the scientist approach. One exquisitely theoretical, the other certainly operational.

This is how a 'neutral', epistemologically tolerant methodological approach of the scientific disciplines that can draw information from it, brings different scientific approaches back on the same level, no longer hard or soft as a sort of scientific-academic allotment has always maintained (Corposanto & Molinari, 2022).

Just in this perspective, sociologists can once again occupy a leading position in the scientific debate, making use of their ability to read in advance the situation to be analyzed (the hypothesis formulation phase), carrying out an adequate intervention plan (by means of imagination) and being able to count on an apparatus of techniques that today appear more adequate to grasp the meaning of things (Wright Mills 1953).

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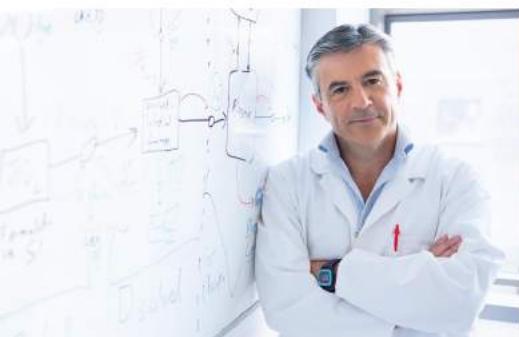
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