ESPACIO I+D

INNOVACIÓN MÁS DESARROLLO

INDEX

Academic Papers

EDITOR'S LETTER

As every four months we proudly present the number 15 of the Digital Magazine Espacio I+D, Innovación más Desarrollo. In keeping with our multidisciplinary nature, we have integrated a number that is a clear sample of the responses offered by academia and research to human problems, thus fulfilling the primary function of the University: to transform and positively impact the lives of citizens.

From different institutions, both from outside and inside of the country, we have received collaborations, among them: "Challenges of primary health care implementation from a human rights approach", an article from the National University of Rosario Argentina. From the Autonomous University of Mexico City (UACM) we present the article "Memory and elements of tradition in the work of Elena Garro", as well as the article "Civil Associations that cater to drug users in Villahermosa, Tabasco" of the Universidad Juárez Autónoma de Tabasco (UJAT). In an inter-institutional collaboration between UNACH and CONANP, the article is presented: "Conservation of a micro-watershed through social participation in the natural resource protection area "La Frailescana", Chiapas, Mexico.

From our house of studies (UNACH), the articles: "Styles of learning and academic performance of university students. The case of students chemistry of the UNACH", in addition to the article "Characterization of the practice of self-medication in university students" and finally the article "Digital institutional repositories and the open access as a tool for academic content diffusion".

In our academic documents section we have "Rosario Castellanos' lessons: Literature, history and politics" (UNAM), "Risk factors related to acute respiratory infections in children under five years old in a population with a high degree of marginalization of the state of Chiapas" (Linda Vista University-UNACH) and "Trends in tele-health in Chiapas" (Polytechnic University of Chiapas).

Our academic report is an inter-institutional collaboration with UNICACH, called "The effects of gravitational processes in Chiapas", with a current topic such as: the displacement of materials on hillsides and soils. In addition, our cultural report is dedicated to the centenary of Mexican writer Juan Rulfo (1917-2017).

This issue also includes in epub format the book "The Villaflores Chiapas earthquake, its realities and consequences" that delves into the theme of earthquakes and raises a reflection about these and its impact in the Mexican southeast.

As in all issues, we hope that the content of this magazine is to your liking and above all that it fulfills its mission to spread and help the generation of knowledge.

Enjoy your reading!

"*Por la conciencia de la necesidad de servir*"
Universidad Autonoma de Chiapas

The editors

Although health systems have gone hand in hand with the behavior of society's needs, it is only after the Second World War that basic health policies are being implemented, based on Bismarck and Beveridge's models.

This development of health policies that face the demands and needs of an increasingly globalized society and the development of new technologies, make imperatives new models and strategies that allow the reduction of gaps between countries. In health, these differences are increasingly marked and have forced the World Health Organization (WHO) to implement programs of universal application, aimed at solving major health problems. Within this global framework, strategies have been developed, such as the Primary Health Care, the Universalization of Health Services and the Sustainable Development Goals.

Under this context, three major Sanitary Reforms in the World to which our country has been incorporated have been implemented since the middle of the last century. The new millennium brings new challenges such as the epidemiological type, the demographic transition, the rebound of emerging and reemerging diseases, a longer life expectancy and the increase of non-infectious chronic diseases; in addition to the health economic crisis and the need for universal coverage that allows health for all, it is necessary to implement new models, focused on multidisciplinary participation, that can respond to this set of challenges.

The main objective of the International Congress on Challenges and Perspectives of Health Systems in the XXI Century, is to promote and disseminate the different approaches that in health should be considered to address the current problems of the sector, with emphasis on priority programs, the epidemiological problems and in the participation of different elements that constitute a small part of the Health Systems. As part of this effort today three editorial materials are presented, "Challenges of primary health care implementation from a human rights approach", "Trends in tele-health in Chiapas" and "Risk factors related to acute respiratory infections in children under five years old in a population with a high degree of marginalization of the state of Chiapas".

The so-called Fourth Healthcare Reform requires the implementation of new management models that allow maintaining or improving public and private health through:

a) Care of people and the environment
b) Promote, protect or recover health
c) Reduce or compensate the incapacity

Attending it through a multidisciplinary approach, that requires new skills, as well as a greater knowledge of public policies, regulations and models in health and the development of better care models.

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ARTICLES

CHALLENGES OF PRIMARY HEALTH CARE IMPLEMENTATION FROM A HUMAN RIGHTS APPROACH

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— Abstract—

This paper is aimed at recognising the guidelines and challenges raised by the implementation of ᴘʜᴄ from a Human Rights approach. With this purpose we reviewed and analysed the origins of the primary health care (ᴘʜᴄ) concept, its meanings, implementation and interrelationships with the health system, the right to health and the social, political, economic and cultural context. As a result of this analysis we concluded that: a) the implementation of ᴘʜᴄ from a Human Rights approach means not just its recognition as a health strategy for organizing the health system and guiding principle for health actions but as a political and social tool for citizenship construction and as relevant concept for the development of national and supranational regulatory frameworks to compel the State to act as a guarantor and promoter of the right to health b) the right to health has to be recognized as a fundamental human right, inextricable from other economic, social and cultural rights and c) public policies and health systems need to be based on ᴘʜᴄ in order to guarantee universal health access.

Keywords

Primary Health Care, Human Rights, Public Health Policy; Policy Making, Health Policy, Planning and Management, Social Determinants of Health.

This article aims to recognize the guidelines and challenges posed by the implementation of PHC from the Human Rights approach. With this purpose we reviewed and analyzed the origins of the Primary Health Care's (PHC) concept, its conceptions, way of implementation and interrelations with the health system, the right to health and the socio-political, economic and cultural context. As a result of this analysis we concluded that: a) the implementation of PHC from a Human Rights approach means not just its recognition as a health strategy for organizing the health system and guiding principle for health actions but as a political and social tool for citizenship construction and as relevant concept for the development of national and supranational regulatory frameworks to compel the State to act as a guarantor and promoter of the right to health b) the right to health has to be recognized as a fundamental human right, inextricable from other economic, social and cultural rights and c) public policies and health systems needs to be based on PHC in order to guarantee universal health access.

The first section deals with the conceptualizations about PHC and its more immediate precedents; secondly, the implications of conceiving PHC from a human rights perspective are analyzed; thirdly, the way in which the right to health has been regulated in the national legal order is studied; fourthly, the characteristics of the health system are described and, finally, the context of health commodification in the 1990s and its current re-edition

PHC CONCEPTUALIZATIONS

This section seeks to answer the following questions: How has the PHC been conceptualized? How did it come about? How has it been used? It starts from the premise according to which the concepts are not neutral, but that it is conditioned and conditions concrete practices, delimits the problems that are addressed and the possible solutions or answers that are elaborated and implemented. The conceptions that sustain health and PHC impact on the political legal structure and vice versa. For this reason, it is considered that a restrictive conception of the scope and a PHC extension entails a restrictive response of rights incompatible with the national legal scaffolding.

The milestone of the PHC is established from the Alma-Ata Conference (1978) where an alternative framework is proposed to organize the health system, the health problems of the most vulnerable population. In this framework, PHC is defined as "essential health care based on practical, scientifically founded and socially acceptable methods and technologies, made available to all individuals and families in the community through their full participation and at a cost that the community and the country can support,

in each and every one of the stages of its development with a spirit of self-responsibility and self-determination. Primary care forms an integral part of both the national health system (of which it constitutes the central function and the main core), and of the overall social and economic development of the community" (Pan-American Health Organization, 1978).

Since the 90s, health is considered as a fundamental component of a country's development process in the region, establishing a close link between both concepts. Thus, health is placed as a condition of development and they urge to establish health equity between the different countries and towards the interior of each one. From this conception of health, it begins to intervene in favor of improving the populations' living conditions. Health promotion becomes an effective proposal because it recovers the importance of the social environment.

In this sense, PHC has been thought of as: a philosophy based on principles such as universality and social equality, equity and social justice, integrity, self-responsibility, participation and community development; a strategy for adapting human resources, social participation, intersectional articulation, programming integrated by needs, appropriate technology, new organization modalities and reorientation of financing; a program that includes plans, objectives, activities, minimum and essential services to maintain the population's health. Another way of conceiving it, not excluding other visions, is that PHC can be a way of organizing the health system, based on the three levels of care, but whose focus is placed on the first level. It can be briefly mentioned that the first level has to do with the activities of promotion, prevention, assistance, diagnosis, treatment and rehabilitation of basic specialties, in the ambulatory modality. The second level of care: includes actions and specialized ambulatory care services, and/or requiring hospitalization.

While the third level of attention: includes actions and services of high specialty and medical and technological complexity, constituting the last level of reference. Some systems that are more inequitable, less promotional and preventive, allocate a large part of the health budget to this last level of care.

Within the PHC the circulation of people must be organized by the different levels of complexity. Following this logic, more must be invested in the first level of attention since it is constituted as the entrance door to the health system, hence some authors suggest that the most qualified and specialized personnel should be at this level (Testa, 1985).

However, PHC implies much more than the first level, it **operates as much as a theoretical, ideological and operational framework in which responses to health problems can be found**. Thus, PHC focuses on the community's main health problems, which is why it focuses on maternal and child care, actions at home, immunizations against major infectious diseases; fight against vectors; medicine supplies, the implementation of the family doctor (territorial organization proposed through the Dawson Report); sexual bio-politics and reproductive patterns; technology applied to health; incorporation of alternative or traditional medicine to health teams; training of community human resources and cross-community programs.

PHC is the initial link or the gateway to the health system, because it is usually located within the communities themselves, where the daily life of individuals is developed. It is designed to provide essential health care, but in the case of a vulnerable population, accessibility at the first level of care is often the only one available (Testa, 1985). However, it must be kept in mind that although the PHC strategy implies revaluing the community as a center for defining health problems, and for drawing up public policies based on it, we must not fall into the myth of the community or address problems of "a fictitious community". This is a community defined from expert knowledge without having a real territorial base; a community homogenized in its differences, in which heterogeneities are not distinguished inwards -for example, considering a village homogeneous from the spatial delimitation and without thinking about the subjective delimitations, ethnic boundaries within the same community (Rodriguez Garavito, 2017).

Thus, the PHC serves as a framework that defines what health interventions, where they are carried out and how they are produced or implemented. To do this, it is necessary to contextualize PHC, since each scenario defines the specific scope it has. Therefore, we can mention that there are as many PHC strategies as there are health systems in which it is inserted. This must be taken into account for effective, efficient and equitable interventions.

It has been used in some social contexts to reduce health system costs and in this sense it was constituted as a "poor strategy for the poor", **focused and selective**, understood by some authors as a specific set of health activities aimed at specific population groups, usually the poor.

In this way there are some limitations that the PHC finds that have to do, on the one hand, with the existence of differentiated services for different social groups and not for the whole population and on the other, with which it can be designed as a form of decreasing social health spending.

In fact, for the PHC will be such, when it is constituted as "a network of interconnected establishments by clear procedures of reference and transmission of pertinent information that orders the patients' internal circulation; a social behavior that follows the rules of income and circulation" (Testa, 1985). Then, if certain conditions are not met: regionalization, organization of circulation and interconnected network of establishments, we would not be in the presence of PHC but rather configuring what this author calls: Primitive health care.

For this reason, the elaboration and implementation of public policies and health systems based on PHC, capable of suppressing barriers and accessibility deficit to health systems is intended.

However, in spite of the fact that different definitions have been elaborated (PHC: selective, PHC as the first level of attention or as a gateway, PHC Integral, PHC from a human rights approach) and different PHC categorizations and classifications have been proposed, there are few studies that account for the interactions that emerge from the configuration of the Health System, PHC, and the right to health.

WHAT DOES THINKING ABOUT PHC INVOLVE FROM A HUMAN RIGHTS PERSPECTIVE? A VIEW LOCATED IN ARGENTINA

Thinking about PHC from a human rights perspective implies that health is conceived as an essential human right and, therefore, must be guaranteed and promoted by positive actions of the state, health as a right cannot and should not be trapped in market logic, cannot be offered as a consumer good.

It also implies the national and supranational guarantee of enforcing the right to health in judicial headquarters to fulfill an elementary right intrinsic to life. Although, taking into account that the human rights' judicial process does not end up being a suitable way, given the structural limitations and the barriers in the access to justice that affects in the majority of the cases, to the same people that are deprived of the right to health - *disadvantaged, fragile* people. In this sense, several authors agree that "Judicial process, up to now, is not actively promoting equity, the right to health and inter-institutional dialogue" (Gotlieb *et al* 2016).

In this sense, Lorenzetti (2008) states that, "anyone who does not have access to the basic primary goods that the market provides, does not have access to the basic legal rights that the justice system offers" (Lorenzetti, 2008: 65). Thus, access to justice ends up being restrictive for vulnerable people, who are

deprived of public health promotion and disease prevention policies, in addition to being passive recipients of targeted measures, which end up stigmatizing poverty and sanctioning, explicit or implicitly unhealthy "lifestyles". With actions that tend to hold people responsible for their own health state.

Following Abramovich (2004), the rights approach does not take as a starting point the existence of people with needs that must be assisted, "but subjects with the right to require certain actions, benefits and behaviors (…) Rights establish correlative obligations and these require mechanisms of enforceability and responsibility". Therefore, in this perspective, actions towards the granting of power through the recognition of rights are addressed. Thus, understanding from the rights approach implies that "the obligation to reduce poverty does not come simply from the fact that certain social sectors have needs, but also that they have rights, attributions that give rise to legal obligations on the part of others and therefore to the establishments of tutelage, guarantee and responsibility mechanisms" (Abramovich, 2004: 11).

Therefore, the rights approach enables judicial actions, in the subjects' ownership to claim, before the corresponding authorities, the lack of fulfillment of an obligation. According to Abramovich (2004) this does not limit the governments' margin of action to "own their strategies" hence it is possible to make compatible, even if different paths are taken "state ownership and self-determination of their actions" with the full realization of Human Rights contemplated in the international normative body. States can choose different strategies, have a wide field of discretion, to carry out actions that guarantee human rights and fulfill their positive obligations. In this way, the human rights approach is compatible with the decisions adopted by the states for health promotion and diseases prevention.

Another implication of the rights approach adoption is that although the State enforces its obligations to other non-state actors, it is ultimately responsible for compliance with the obligations imposed by the national or international human rights law (Abramovich, 2004). For example, in Argentina, the Supreme Court of National Justice (SCNJ) considered the federal government as guarantor of the right to health enshrined in the Constitution and in Human Rights Pacts, thus imposing on it the obligation to provide health care services, in the absence of provision by provincial effectors.[1] However, what this failure evidenced was the lack of adequate

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1   Supreme Court of National Justice, Argentina. SCNJ: Cause V.625.XLII "Verga, Ángela and others w/ National State and others under precautionary measure"

constitutional mechanisms for the federal government to intervene in the design of public health policies in the provinces (Abramovich, 2004).

In judicial pronouncements, the right to health and its preservation as included in the right to life has been reaffirmed and has highlighted the non-deferrable and non-delegable obligation that the State has to guarantee this right with positive obligations -based on international treaties by empire of the art.75 inc. 22 of the Argentine National Constitution (ANC). It has also been pointed out that the right to life is the first right of the human person that is recognized and guaranteed by the ANC.

Health as a right has indeed been recognized in the national normative body, as an international one. In this way, we can mention some of the international agreements that contain specific clauses that protect life and health and that oblige the national state to ensure compliance and promote all necessary measures -progressively- to preserve the right to health. This is what is established in: American Declaration of the Rights and Duties of Man (art. VII); the Universal Declaration of Human Rights (art. 25, Inc. 2); American Convention on Human Rights (San José de Costa Rica Pact,[2] arts. 4°, Inc. 1 and 19); International Covenant on Civil and Political Rights (art. 24 Inc. 1°) the International Covenant on Economic, Social and Cultural Rights (art. 10, Inc. 3°), linked with the assistance and special care that must be ensured.

The commitment assumed by the states parties obliges them to have up to "maximum resources" to achieve the full effectiveness of the rights recognized in the International Covenant on Economic, Social and Cultural Rights[3] (art. 2, Inc. 1; art. 12, International Covenant on Economic, Social and Cultural Rights).

THE RIGHT TO HEALTH IN THE ARGENTINIAN JURIDICAL SYSTEM

The Legal System, as we know it, is supported by the full validity of the ANC, which is the Supreme State Law, which sets formal and material limits

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2 CN Argentina, art.75. inc. 22. Available in: http://servicios.infoleg.gob.ar/infolegInternet/an-exos/0-4999/804/norma.htmLey 23.054 Approves the San José de Costa Rica Pact. Available in: http://servicios.infoleg.gob.ar/infolegInternet/verNorma.do?id=28152

3 CN Argentina, art.75. inc. 22. Available in http://servicios.infoleg.gob.ar/infolegInternet/an-exos/0-4999/804/norma.htm.Ley 23.313. Approves the Economic, Social and Cultural rights International Pacts and its Optional Protocol. Available in: http://servicios.infoleg.gob.ar/infolegInternet/anexos/20000-24999/23782/norma.html

to political power. The rights and guarantees enshrined in the ANC, are characterized by their breadth and universality (reach all the inhabitants of the State, whether national or foreign). This characteristic derives as much from the preamble as from articles 14 and 20 of the ANC. Thus, the ANC feels an egalitarian principle for nationals and foreigners.

It should be noted that, with the 1994 Constitutional reform, the right to health was included explicitly through article 42 of the ANC. However, several authors consider that the right to health did not have adequate constitutional treatment in the country, or was regulated in an unsatisfactory manner (Moyano and Escudero, 2011), basing its main criticism on the fact that although it refers to the right to the protection of health, it does so in relation to the consumption of goods and services.

On the other hand, other authors believe that since the aforementioned reform the existence of the right to health in the courts has been made visible and judicial activism has been generated in order to assert that right (Abramovich and Pautassi, 2008).

Despite the aforementioned, it can be discussed that even before the constitutional reform the SCJ's jurisprudence, which acts as the last interpreter of the ANC, understood that the right to health is an essential Human Right. In numerous failures the SCJ even considered the right to health more hierarchically than other rights[4]. Priority in case of collision of interests the rights to life, health, physical and psychological integrity over property rights.

Despite the above, the fact that the right to health was not included, or was not expressly contemplated, even before the constitutional reform, did not prevent its existence from being recognized in numerous judicial decisions[5], considering it a right attached to life, detaching it from art. 33 of the ANC (Bidart Campos, 2005).

Indeed, as Bidart Campos (2005) argues, article 33 ANC[6] serves as a matrix to admit new rights, or to expand those enumerated, the "*content calls for a*

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4   Supreme Court of the National Justice, Argentina. SCNJ (Court decision, 255: 330); (Court decision, 263.453; 306: 1892).
5   Supreme Court of the National Justice, Argentina. SCNJ "Ponzetti de Balbín" (Court decision 306: 1907); "Baricalla" (Court decision 310: 112)
6   Article 33 SC.- The declarations, rights and guarantees that the constitution enumerates, will not be understood as a denial of other rights and guarantees not enumerated; but that they are born of the principle of people's sovereignty and of the government's republican form.

flexible and progressive interpretation consistent with the purposes and values established in the constitution".

Thus for Bidart Campos (2005) the list of rights listed does not exhaust the list of recognized rights. In this same sense, Zarini (1996) states that every man's fundamental or primary right must be considered included in the ANC, whether or not explicitly recognized as for example: the right to health, life, physical integrity, honor, intimacy of private life. For both authors, there are implicit rights that arise from the democratic ideology of the national constitution and derive both from international treaties and declarations on human rights with constitutional hierarchy (by application of article 75 Inc. 22 ANC), from their political philosophy and from their ideological roof. In effect, the constitutional enumeration is not limitative, but merely exemplary, in no way can we ignore the fundamental rights of man, the republican system and the people's sovereignty, either by imperfect enunciation, or omission, or because they could not be planned (Zarini, 1996, p.140).

So the debate about whether the right to health has express or implicit consecration becomes at least partial, since the interpretative effects that emerge are comparable, and in no way has it limited the right to health recognition in the judicial area as it arises from failures both prior to the reform and as subsequent[7].

The SCJ's doctrine reiterated that the "man has inherent or pre-existing rights to positive law that must be enforced compulsory by judges in specific cases, regardless of whether or not they are incorporated into legislation"[8].

Finally, following Bidart Campos (2005) after the 1994 reform, it can be acknowledge that the right to health has gone from being considered an individual right of each person, to being considered a right of collective incidence, and also, in both cases, as an essential human right. For the author, both of the 1853 constitution, and of the 1994 reform, of the judicial

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7   SCNJ "Campodónico de Beviacqua Ana c. Ministry of Health and Social Action, Secretariat of Health Programs and Bank of Neoplastic Drugs" 2000 and "Association Benghalensis and others c. Ministry of Health and Social-National State Action" 2000. The Law, 2001-B, 12."Etcheverry Roberto c. Omint Stock Corporation and Services". 2001; Court decision: 321: 1684 and cause A.186 XXXIV "Association Benghalensis and others c / Ministry of Health and Social-National State Action under protection law 16.986" of June 1, 2000.

8   SCNJ, (Court decision: 241: 291) 1996. Voting by the Minister of the Supreme Court of National Justice, Dr. Fayt, in the case "BRE, c. Argentine Federal Police under protection" (B.77.XXX), of December 17, 1996.

decisions and of the human rights' international law system, it appears that health has the value of a collective legal good. This author, quoting Dr. Rodolfo Vigo, says that "the constitution "text" must be interpreted from a "con-text"; the constitution is more than what its rules say". Always taking into consideration the principle "pro homine", the principle "pro actione" and the principle "favor debilis" (Bidart Campos, 2005).

In this same sense the scj considered that the interpretations should contemplate "the particularities of the cases, the legal order in its total harmony, the aims that the law pursues, the right's fundamental principles, the guarantees and constitutional rights, and the achievement of concrete, legally valuable results"[9]. In practice, the right to health is defined by the historical and current configuration of the health system, the type of coverage that it establishes, how it organizes the circulation of people through health services, measures for the promotion and prevention of diseases that it adopts, in short if it implements the phc (as a universal or selective strategy, comprehensive or restrictive, fragmented, segmented), as well as the link with other sectors and with the structural determinants of the health-disease-attention-care process (h / d / a / c) of the communities.

ARGENTINIAN HEALTH CARE SYSTEM: PHC POSSIBILITIES AND CHALLENGES

According to the World Health Organization (2000), Health Systems include all the resources that a society dedicates to the protection and improvement of people's health and covers all activities whose main purpose is to promote, restore or take care of health (who, 2000: 3-12). Health systems articulate three components: management, financing and care.

The health system in Argentina is a complex system, where the same institutional political conformation of the country -federal- generates a division in different jurisdictions and governments (national, provincial and municipal). This demarcation of powers between the Nation and the provinces is based on the anc, which has translated into practice in superposition and dismantling of laws, resolutions, programs not necessarily coordinated among them. However, the federal organization has not prevented other countries such as Brazil and Canada from organizing their health system in an integrated manner.

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9   SCNJ: "Saguir y Dib" 1980 (Court decision: 302:1284) Available in: http://falloscsn.blogspot.com.ar/2005/08/saguir-y-dib-1980.html

In Argentina we can distinguish, as in most Latin American countries, three subsectors that coexist in a disjointed and fragmented way: 1) the public subsector, 2) the social security subsector and 3) the private subsector. We have subsectors that are not integrated among each other, but that also towards the interior of each subsector this disintegration and disarticulation that deepen inequities and asymmetries are repeated. Thus, we are in the presence of a segmented and fragmented health system. Segmentation implies: the coexistence of subsystems with different financing modalities, affiliation and provision of health services that will depend on labor insertion (or not), income level, payment capacity and social position, while fragmentation implies: coexistence of several non-integrated units within the health care network (PAHO, 2007).

There is also a multiplicity of financing sources, the public sector is financed with fiscal resources, in general from regressive indirect taxes, the Social Works are financed with a percentage of the salary of the workers and employers and a solidary fund of redistribution is constituted, while private entities are financed with the particular contribution of the people who hire the service (Belló, Becerril Montekio, 2011).

It should be noted that according to the World Health Organization (WHO, 2009), Argentina is the country in Latin America with the highest investment in health; it invests 9.6% of the gross domestic product (GDP). But higher total spending does not necessarily translate into greater health for the population, nor better indicators. Of the total expenditure on health, the public subsector only finances 48%, and the rest between private and social works. It can be mentioned that the United States is the country that spends the most of its gross domestic product (15.3%), almost 46% of this expenditure goes to the public sector, for the implementation of the Medicare and Medicaid systems.

It is necessary to stress that the greater the contribution of public spending, the more equitable and redistributive will be health spending. For ECLAC (2011) in Argentina the main source of inequities comes from: 1) excessive private spending, 2) excessive fragmentation of health spending, and 3) little public sector participation in spending. This gives rise to what they call triple fragmentation at the regulatory, territorial and rights level (ECLAC, 2011).

PHC INSERTION CONTEXT

PHC varies according to the social, economic, political and legal context in which it is inserted and according to the health system configuration in which it is to be implemented (Yavich *et al* 2010).

Thus in restrictive, regressive contexts, where the economic order defines priorities in health has had little extension and development. As mentioned before, the Argentine health system, in its institutional legal framework, was configured, following the principles of universality, gratuity, solidarity, progressivity; those that were distorted in its implementation, widening a gap between what the law prescribed and the form of organization assumed by health services (selective, expulsive, ineffective and inefficient). A gap that is further deepened by the application of neoliberal measures to the health sector -in the 90s and nowadays- based on targeting, fees, digressiveness, sectorial and selective vision and outlining health as a consumer good, defined by a State model with minimum rights.

In the 1990s, a series of reforms took place in the health sector in which neoliberal measures were applied, leading to decentralization, targeting, fees, hospital self-management model, rationing, and free election of affiliates to the social work, allowing the transfer of contributions to the companies of prepaid medicine and the emergence of intermediary providers of health, framed in the guidelines of the Washington Consensus that supposed: fiscal discipline (adjustment), privatizations of public services, tax reform, deregulation, openness to foreign investment (Comes, 2008). These reforms were widely criticized, as they negatively impacted the population's health, widening the inequality gap. This process was called commodification of the health sector (Comes, 2008).

In this sense, Maingón (2000) considers that these measures have deteriorated the standard of living of large population groups and have accentuated the concentration of income and increasing poverty.

The incorporation of neoliberal measures to the health sector was triggered not only by an economic or political process, but ideological, in which a communication matrix was constructed that dominated official and private discourses, in pursuit of the system's effectiveness and efficiency principles but at the expense of equity, where the role of the State was minimized.

As Arce (2010) points out, the paradigm of universal coverage was abandoned, with the adoption of pro-competitive reforms, based on the recommendations

of international organizations, interested in guaranteeing the financial sustainability of the system. These processes are reissued at present.

In this context, it is the economic order that defines health priorities, defines a model of democracy and defines a model of citizenship. The implementation of social policies according to the capital logic generates limited democracies, leaving out the social expression of democracy (Zemelman, 1992).

This way a citizen who loses his right's quality of subject emerges to be an object of care and tutelage, the subject is passive, does not participate in the processes of decision making or management. Setting out what Fleury (1997, 2007) calls inverted citizenship or states without citizens, where there is an absence of social integration, dismemberment of the social fabric, exclusion and inequality, marginalization of population sectors that cannot access a formal job, or if they do access it, they do it in informal or precarious conditions, which is solved or pretended to be solved with an emergent nature assistance model, with reeducation characteristics towards the most vulnerable groups, that although they may access certain goods and services, a compensation relationship is established that it ends up stigmatizing the group and they do not form a relationship of right but of assistance. The citizen has to prove that he failed in the market to be the object of social protection, it is in this sense that the author speaks of inverted citizenship.

It should be noted that, as Iriart, Merhy and Waitzkin (2000) maintain, a large part of the reform process was done without discussion in the Legislative Branch and eluded public debate, giving a silent political process. Speeches of "experts" appear who propose that the health sector crisis is due to financial causes and the market would operate as a regulator of costs and improve the effectiveness of benefits, adopting managed care. This involved the adoption of financial and administrative reforms in order to separate the provision of service from the financial administration, based on the assumption that the problem lies in the costs of benefits and their poor administration.

In this sense, according to Abramovich and Pautassi (2008), the reform process' characteristics implemented during the 1990s have to do with the application of fiscal criteria to the health sector and the consequent idea of reducing costs to the detriment of care, the reduction of public expenditure and the recovery of costs through the co-payments system or quotas, the separation of functions of regulation, provision and financing of the sector, the freedom of choice of affiliates and the implementation of a basic package of medical benefits.

In this sector reforms context, health stops being considered a right and is offered as a more available resource for those who can agree to "buy it". In this sense, several authors agree that the 1990's reforms in the health sector in Latin America, implied that health ceased to have the character of a universal right, to become a market good, from being a good public, with the State's mark of responsibility, it became a private good in which the individuals are responsible for their own health status. It is installed as a purpose, as proposed by Rofman and Foglia (2015) to move to the market's orbit the bulk of state services with a clear reduction of the state apparatus. In this complex plot, the idea of a citizen that emerges had to do with a consumer, a subject assisted by the State and immersed in a client-like; welfare-like logic in this scenario, social participation was strongly limited (Comes, 2008; Laurell, 1995, Merhy, Iriart and Waitzkin, 2000). In this way we want to make it clear how the right to health is necessarily linked to the construction of citizenship. Thus, at least two positions have been identified in the bioethical literature. According to Comes and Stolkiner (2000, 2006), a position: based on charity, altruism, presupposes relations of asymmetry and breaks with social equality; and another position, which is based on social redistribution, based on a solidary principle, recognition of citizenship and that in the health sector translates into universal access to health and universal health coverage (WHO, 2014).

IF, AS A STRATEGY, IT PROVED TO WORK, WHAT ARE THE RESISTANCES?

It can be pointed out that the organization of health systems based on PHC would be the path and the strategy for the fulfillment of human rights and in particular the right to health. Some paradigmatic cases linked to the PHC implementation can be found in Cuba, where the morbidity and mortality profile of their population changed and, in particular, in relation to maternal and infant mortality that was drastically reduced after the PHC strategy implementation and crosscutting measures that operated on the main determinants of the H / D / A / C process. In this sense, the PHC, in addition, proved to be a strategy that allows, with low cost, to achieve great results in health. As opposed to the aforementioned, we find cases such as the United States, which, despite a large health budget, does not modify the morbidity and mortality indicators in a positive manner. Another example can be found in the implementation of an Integrated Health System in Uruguay and in particular, with the implementation of the public policy of Community-based Care Systems and the Brazilian Unified Health System - Programa Más Médicos-, both with significant improvements in the people's quality of life expressed in objective indicators (MSPU, 2003, Healthy Uruguay, 2005-2009, Laca, 2013).

For this reason, phc is postulated as an eminently political and social tool from which to design, develop and implement a universal health policy for all.

Finally, it is worth highlighting the two conditions for developing phc: 1) that is linked to regionalization, paying attention to the inequity in the distribution of human and physical resources and health infrastructure to respond to health problems and their concentration in urban areas, 2) consider the existence of a system that organizes the circulation of people through the health system (Testa, 1985).

From a human rights perspective, phc is a valid strategy insofar as it can satisfy the conditions referred to by Testa (1985) and to the extent that it guarantees accessibility to the population and health services can be obtained in an equitable manner by it (Hamilton, 2001 in Comes, *et. al* 2007) without accessibility barriers in symbolic, administrative, economic, geographical, linguistic and cultural terms (Solitario, Garbus, Stolkiner, 2008).

In this sense, it is necessary to think about the conditions, guidelines and challenges posed by the implementation of phc from a human rights perspective. These guidelines are established since the 1970s. Thus, health systems have been organized on the basis of universality, integrality, interdisciplinary nature, intersectorality; regionalization; recognition of community self-care practices and depathologisation of daily life; gender approach. However, the resistance to its application and implementation has been vast, despite the effectiveness demonstrated by the States that implemented phc as the main strategy to organize their health system.

Resistance to the phc implementation comes from both the industrial medical complex and the establishment of a hegemonic medical model (hmm) to understand health problems, the medicalization of everyday life, its pathologies, the establishment of a form of care, techno-assistance, the growth of the third sector and the privatization of highly complex services. The neoliberal measures applied to the health sector have implied a restriction of citizenship, have contributed to the consolidation of barriers in accessibility and have weakened a large part of the population as opposed to the national and international normative body on the right to health.

In this sense, to think about the right to health is to think of a system as a whole, in which health and illness appear as political processes. However, it is the political processes that are usually masked (Menéndez, 2005).

CONCLUSIONS

This paper has presented some of the conditions, guidelines and challenges posed by the implementation of PHC from a Human Rights approach. It is necessary to recover this perspective against the advance of the commodification of the right to health.

The health policies that introduce the market logic to the health's field implies a regression in terms of economic, social and cultural rights, and that place health, in general and the PHC strategy, in particular, in a restricted scenario that will reach an impact on the population of Argentina's morbidity and mortality profile, on their quality of life and on the deepening of the system's fragmentation that deepens inequities and existing asymmetries.

It can be concluded that the existence of the right to health in our National Constitution is a necessary and unavoidable condition, although not enough to guarantee health and accessibility to the system, public policies and PHC-based health systems are needed to eliminate barriers and lack of accessibility to health systems. In this way, expand the spaces for citizen participation in the preparation, implementation and evaluation of public health policies, which ultimately will result in a greater and better democracy.

PHC has proven to be a valid strategy due to its effectiveness and efficiency in reversing the main health problems in those countries that have implemented it. However, questions remain about why it is not implemented or extend its scope to other countries and regions? What are the main obstacles and resistances for implementation? The answer emerges from understanding the model of capitalist production, which produces a way of living, getting sick and dying proper to the material conditions of life. In effect, there is a way to produce health and disease characteristic of the capitalist system.

Therefore, PHC is proposed not only as a health strategy, a principle that guides health actions or a way of organizing levels of care; but an eminently political and social tool necessarily related to the constitution of citizenship and, therefore, to the national and supranational legal framework that constrains the State to act.

In this way, PHC is postulated as a health dimension together with a legal, institutional, political and ethical dimension to which a health system must aim to enforce the right to health with equity, for all and without distinction.

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MEMORY AND ELEMENTS OF TRADITION IN THE WORK OF ELENA GARRO

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— *Abstract*—

This paper intends to point out a certain aspect about the elements of the tradition that Elena Garro incorporates in her work: memory. In addition to indicating that the writer recovers the cultured tradition (literature of classical antiquity), the mexican popular (legends, sayings, proverb...) and prehispanic tradition, it is stated above all that the tradition in Garro's work is manifested not so much intertextually, but using his own memory. The traditions in Garro's work are recreations passed through of his own memory.

Keywords

Elena Garro, tradition, memory, literary inventiveness.

Understanding a work is a requirement to open up to what it tells us, even in contrast to our ideas. The work, then, proposes a dialogue. Hans Georg Gadamer, in continuity with the phenomenology and Husserl and Heidegger's hermeneutics, has pointed out that we are only capable of understanding from our historical moment, that is, from a tradition: what we consider valuable and worthy of being conserved. Thus, the understanding consists in recognizing the tradition that gave live to the text. Each era updates fragments of the remote, which another era will have forgotten. That is why the exercise of memory in the creation of a work encourages us to recover the tradition in which it was created, within the limits of our own.

The tradition inherited from Elena Garro was an amalgam of knowledge imbued from childhood, according to her own testimonies, and her constant concern to make literature with her memories. A literate tradition in which the characters of the Iliad were part of her daily life and a popular tradition, whose most visible aspect is found in the sentences, sayings and so-called *short stories*, "the bizarre farces, the ingenious facets and the impossible "happened"; the simple anecdotes, sometimes etiological, other simply humorous; or the memory's formulaic games"[1]. The enormous communicative capacity of this type of speeches admired the Russian theorist Mikhail Bakhtin, who in his analysis of discursive genres pointed out the existence of a dialogism between primary, oral, unofficial and secondary speeches, among them literature. For him, only certain writers are able to incorporate the primary speeches in the secondary ones. Cervantes, for example, is one of those authors who managed to absorb the voices of the community and incorporate them into what would be his masterpiece. In this sense, as Juan Rulfo or Juan José Arreola, Elena Garro achieved this incorporation of the cultured and popular tradition in the written literary text, in a way already distant from the official censorship present in previous movements such as Romanticism, indigenism and other nineteenth-century projects.

I will mention some examples of this use of the present tradition in Elena Garro's work in a way that does not correspond exclusively to intertextuality, but to memory, because it is not a direct use of a textual material transferred to the work, but of a fusion that transits from the memory's natural shape to

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1   Rafael Beltrán and Marta Haro, "Presentation" to their edition of *The Folkloric Tale in Literature and Oral Tradition*, Valencia, Universitat, 2006, p. 11

the original story. I begin with the episode that raised this concern in me: the end of the author's most important novel:

> *I am Isabel Moncada, born of Martín Moncada and Ana Cuétara de Moncada, in the town of Ixtepec on the first of December of 1907. In stone I became on October 5, 1927 before the appalled eyes of Gregoria Juárez. I caused my parents' misfortune and my brothers Juan and Nicolás' death. When I came to ask the Virgin to heal me of the love I have for General Francisco Rosas who killed my brothers, I repented and I preferred the love of the man who lost me and lost my family. Here I will be with my love alone as a reminder of the future for ever and ever. (Garro, 2003: 292)*

This final resolution of the narrative framework, capable of revealing the enigma raised in the title through the oxymoron "memory of the future", was already in the ninth chapter of the first part of Quixote, when talking about the finding of the portfolio that contained the gentleman's following adventures, whose authenticity is the reason for an argumentative episode about truth and history:

> *the historians must be punctual, true and not at all passionate, and that neither interest nor fear, rancor nor liking, do not make them twist in the way of truth, whose mother is history, contender of time, deposit of actions, witness of the past, example and warning of the present, warning of things to come. (I, IX)*

Cervantes' definition is based on the Ciceronian topic embodied in *Del orador*: "Historia, vita memoriae, magistra vitae, nuntia vetustatis", according to the editor Francisco Rico. The topics have the particularity of joining the popular tradition: Garro, then, inserts it in the tombstone of Isabel as a message addressed to all the inhabitants of Ixtepec. If the author knows its Latin or Hispanic origin, she manages to bring that nuance of popular wisdom to it.

In good measure, many elements of the tradition incorporated in the work of Elena Garro have a similar sense of sentence, as a way of orienting the behavior of the younger generations. This is the case of the image of the seductive woman who loses men and appears in *El encanto, tendajón mixto*. The characters of Juventino, Ramiro and Anselmo walk tired and in the middle of the darkness until a store appears in which "*Agreed to the counter, a beautiful woman smiles. She wears a yellow suit and her sumptuous black hair loose to the knees*". (67) She is characterized by an enigmatic speech: "The man is born enchanted; and it depends on the woman that he stays that way or that later he only stares at the stones" (69). Anselmo, the youngest of

the three, accepts a drink offered by the woman, against the warnings of his companions. The store, Anselmo and the Woman disappear. The narrator states that "his friends went to look for him. The date May 3rd, of the following year." So they return to see the three: Anselmo is finishing drinking the cup. From Circe to popular tradition, in the form of a woman in white, witch or demon, this image of the feminine is found in popular legends and couplets. Actually, Garro only proposes a very poetic version of that legend.

The character of Ventura Allende falls into a similar deception: a pig invites him to a wedding, deceives him, or rather, seduces him with food. The party guests are sheep and horses. And, as "wedding without dance would not be a wedding," "the viper of the sea"[2] round begins, Ventura joins and is turned into a sheep. At the end, the Puerco advances to the center of the scene and closes the play: "This little game is over! I won a sheep! And they all lived happily ever after! "(61), in the end is revealed that the pig is the devil. This is a legend also common in various regions of Latin America and even today it is found on Internet sites. Both texts reconstruct, in a complementary way, the episode of Circe and Odysseus: hospitality — the bath and the banquet— which is, at the same time, a sign of danger —the guest is in a vulnerable situation— and the transformation of men into animals; like the woman from *El Encanto*, Circe kept Odysseus for a year. These elements are deeply rooted in popular tradition, as Aurora Galindo has pointed out:

> *Elements of the fabulist traditions of around the world are the sorceress who turns men into animals, the magic wand, the magic herb, the antidote, the liberation of enchantment, etc. Like many wizards, Circe lives in a valley in the middle of a forest, and her residence, wolves and lions domesticated by spells; servant nymphs and dazzling luxury, responds to the enchanted palace's folk pattern, very important also in the epic tradition. (Galindo, 47)*

The assorted shop and the wedding fulfill the function of the enchanted palace in the middle of the forest. The damage, however, is ambiguous: the woman in the piece El encanto... has a seemingly positive sense, while the demon responds to the maximum damage according to Christian tradition.

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2   Popular Mexican singing game

I take this topic to go to the next genre cultivated by Elena Garro: the story. The image of the devil in *The Tree,* both in its theatrical and narrative version, is a corporeal being, with continued zoomorphic characteristics of the medieval representations, similar to those Luisa recognized in the strange character: "a *charro* who breathed fire; he did not have boots but horse hooves and when walking, they drew fire. He had a whip in his hand and with it he whipped the stones and the stones lit fire." As for his appearance, from the first novo Hispanic references of friars on demonic appearances, the Bad used to wear luxurious outfits: cacique in the first years of evangelization, *charro* as the experiences of violence that began with the revolutionary stage implied for the regional peasant culture threatens and disorganizes; and as for the traumatic effects of the appearance, the "fright" is also a collective reference among certain rural groups, a disease, therefore, strictly real for those who claim to have suffered it[3].

I'm going to close this outline with one of Elena Garro's most enigmatic stories: "The week of colors", whose symbolic references are difficult to pin down, to create an almost sinister story in a dream world. The girls Evita and Leli listen to the indigenous servants murmuring about a certain man, Don Flor, who severely punches Domingo, but they keep silent when one of the girls intervenes; both girls perceive the succession of the days differently than adults: "The weeks did not happen in the order that their father believed. Three Sundays together could happen or even four Mondays in a row. It could also happen Monday, Tuesday, Wednesday, Thursday, Friday, Saturday and Sunday, but it was a coincidence ". They observe Don Flor in the distance, despite the warnings of the women, while he talks with the days: "On Friday, leaning out of the window overlooking the corral, he called Don Flor and Monday." Despite the warnings, the girls come to see him and witness delirious events of violence against women named as the days. Fantasy, supernatural and reality limits are blurred in this story, with a possible relation with the indigenous tradition.

As it is known, this mythology has been adapted to the duality based on "a mythical, sacred time, of the numinous, of the supernatural, and the time of

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3   Rogelio Luna Zamora analyzes references related to appearances of what he calls "the myth of the devil on horseback" among the population of the municipality of Cuauhtémoc, in the state of Colima, locating experiences similar to those of Luisa's character: the fact that such an experience manages to make sick those who suffer it: fevers and diarrheas that last for several days ("The construction of fear by social stratum", in Rocío Enríquez (coord.), *Home, poverty and well-being in Mexico*, ITESO, 1999, pp. 229 -259).

men",[4] which was incorporated into the private and family rites that, since the first years of colonization, allowed evading the vigilance of the ecclesiastical authority. Traces of that temporal duality are found in this story, centered on the personification of the days of the week. The worldview of indigenous time, for example, the Maya, assigns to each day a specific color that represents a god. Days were conceived as living beings, with specific traits and attributes. For example, "*Imix*, the first of the days, connotes the monster deity of the earth, root from which everything proceeds. Among its symbols are the lotus flower [...] Next comes Ik, the wind and life [...] introduces the god of rain. *Akbal* is the darkness, connotation of the underworld, and the jaguar, the nocturnal sun that runs through it... ".[5] In almost all Mesoamerican calendars, there is the idea of hierarchy between the days and periods to which they are subordinated, as well as the divinatory possibility and, therefore, controllable by certain authorities.[6]

At a popular level, there is no evidence of an indigenous tradition related to a similar conception of time: the Christian calendar was adapted early to the pre-Hispanic festivities and the cultivation periods. However, the similarities between this personifying vision of the days and that of "The week of colors" are evident: the first reference to the matter appears in the voice of the indigenous washerwoman: "Don Flor beat Domingo until blood was taken and Friday also came out purple from the beating".[7] Through the children's characters, the story of Elena Garro establishes a similar distinction between an objective and a subjective time; the women imprisoned in the story are distinguished from each other by the colors of their clothing, but also by their attributes: Sunday: "Lust" and "Largesse"; Saturday: "Laziness" and "Chastity". The precarious and violent conditions in which women live under Don Flor's domain recall the decline of indigenous belief.

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4   Guadalupe Vargas Montero, "The worldview of indigenous people", p. 126 available at: http://www.sev. gob.mx/servicios/publicaciones/colec_veracruzsigloXXI/AtlasPatrimonioCultural/05COSMOVISION.pdf
5   Miguel León-Portilla, "Time as an attribute of the gods", available at: http://americaindigena. com/portilla.html
6   Federico González, "The Mesoamerican calendars" available at: http://americaindigena. com/20calendariosmesoamericanos.html
7   Elena Garro, The week of colors, Mexico, Porrúa, 2015, p.77.

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CHARACTERIZATION OF THE PRACTICE OF SELF-MEDICATION IN UNIVERSITY STUDENTS

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— *Abstract*—

This document exposes the characterization of the practice of self-medication in college students. The self-medication rate found in this study is alarming, and medications that are mostly consumed, correspond to the category of OTC. Otherwise to that found in other studies, the main drug consumed is acetaminophen, followed by drugs for influenza. It is important to mention that they consume acetaminophen as an analgesic.

With knowledge, and responsible self-medication could be useful for the first level of health care, but the population is not yet prepared to avoid consequences from not indicated and indiscriminate use of drugs with adverse consequences for their health.

Keywords

self-medication, public health, undergraduate.

To speak of self-medication, in the broad sense of the concept, is to refer to self-care through a set of activities carried out by the individual without the assistance of a health professional (WHO, 1985). Likewise, when referring to self-care, this implies the actions of prevention, diet, physical exercise, moderate consumption of alcohol, avoidance of tobacco consumption and drug abuse.

However, self-care also extends to the patient's ability to resort to the use of over-the-counter medications; paradoxically, this is what the term is currently reduced to. We are talking about three decades after the definition made by WHO.

Given the conception of the term self-medication in the open population, it is reflected as a serious public health problem that needs to be studied and addressed from the various disciplines and in the context of the political, economic, cultural and psychological determinants that operate in the global process. Among the common consequences are adverse reactions, complications for timely and adequate diagnosis, and drug resistance (López *et al*, 2009).

In this regard it is necessary to remember that pharmaceutical drugs are differentiated between over-the-counter and restricted-sale ones, that is, sale only by medical prescription. Although this differentiation is due to the risks of its use, it is also true that over-the-counter medications do not necessarily produce side effects in the face of inappropriate use, frequency or overdose, becoming a risk for people. Given this, each country must take measures and actions to ensure the safety, quality and effectiveness of medicines and monitoring their commercialization (FIP, 1996, Kregar and Filinger, 2005) and should also consider frequent monitoring of consumption and long-term impact.

Accessibility and lack of drug use control exacerbate the problem, especially if we talk about the lack of responsible self-care habits. In addition to this, the cultural variables related to public health leave populations in a situation of high vulnerability to the adverse reactions of the indiscriminate use of over-the-counter medicines and even prescription drugs, such is the case of antibiotics, which in many countries continues to be difficult to control and the consequences in terms of drug resistance (DR), multidrug resistance (MDR) and that have culminated in complicated cases of extreme drug resistance (X-DR).

However, studies have been conducted in Mexico that show more than 94% of self-medication in the Mexican population, both in large and medium-sized cities. In both cases, the traditional medical care habits prevailing in different ethnic groups of the country are reflected as a variable of interest (Soto and Roa 2004; Reyes-Guillén, 2015). That is, there are self-care habits with the concomitant use of medicinal plants, other alternative techniques and allopathic medicines. This condition makes evident that the complete therapeutic knowledge is not guaranteed, let us add to the supra, the language factors (indigenous languages, other than Spanish) and literacy. While the former prevents communication in a high percentage due to ignorance of the language, the latter, in the case of speaking Spanish, are rarely literate bilinguals.

The aforementioned figure can be considered as very important if we consider that at a global level, there is a large percentage of the population that practices self-medication, Venezuela shows 87% of students who practice self-medication (De Pablo, 2011); Spain with 69% (Nefi, 2008); 55.4% for Barranquilla Colombia (Peñuela and De la Espriella, 2011) and 27.3% for Suba in Bogotá, Colombia (López *et al* 2009).

For the previously described, a self-medication study was conducted in a population of university students in San Cristobal de Las Casas, Chiapas, Mexico, with the main objective of finding the self-medication profile and the variables that can explain it.

OVERALL OBJECTIVE

Describe the profile of self-medication in young university students.

METHODS

The present study is an exploratory and descriptive cross-section on self-medication in young university students.

Phase I. Measurement of self-medication frequency

A survey was conducted with random sampling. A questionnaire was applied from person to person to a sample of 200 university students enrolled in Social Sciences and Law programs of the Universidad Autonoma de Chiapas.

The survey instrument was designed for the measurement of socioeconomic variables, pharmaceutical self-medication habits, reasons for not consulting the doctor and the reason to prefer self-medicate.

*Phase II. Statistical analysis to identify the association of
self-medication with socio-cultural factors*

Using the SPSS v18 package, a correlation analysis of the self-medication was carried out with the socio-cultural variables established in the survey.

RESULTS

The present investigation was conducted in San Cristobal de Las Casas, Chiapas, Mexico during the period from February 2015 to February 2016. The study population was of university students enrolled in the Faculty of Law and the Faculty of Social Sciences, taking a sample in equality of proportions with respect to the Faculty of belonging and gender (total sample n= 200).

The average age of the young people interviewed is 20 years old and a 42% are originally from San Cristóbal de Las Casas. The remaining 58% are from different parts of the state, without registering any case from another state or country. The most frequent localities of origin are Comitán de Domínguez and Tuxtla Gutiérrez, capital of the state of Chiapas. Regarding the mother tongue, 18% of respondents correspond to indigenous mother tongue, mainly Tsotsil, followed by *Tseltal* and *Chol*.

Regarding the frequency of medical appointments for general check-ups or health control, 39% state that they go to the doctor periodically for general check-ups; 7% do not go to the doctor and 54% go to the doctor only when they feel ill.

Of the cases that go to the doctor and receive medical prescription, 66% acquire the indicated medication; 34% do not acquire it; they do not buy the medicine because the pharmacy of the public health services does not have it, or because it is very expensive and they do not have the resources to acquire it. Of the percentage that acquires the medicines, it does it mainly in the pharmacy (70%); but 30% acquires it in a grocery store.

Regardless of whether they have the habit of visiting the doctor, the drugs they consume mostly and that they buy without a prescription, in pharmacy and/or grocery store are, acetaminophen (100%); drugs for influenza (85%); vitamins (42%) and deworming (10%), in minimal percentages were mentioned medicines for allergies, anti-inflammatory and muscle relaxants (1-3%).

Regarding self-medication, 100% responded that they do, mainly if it is to remove the discomfort felt by common palliatives, because the medication

is easy to use and avoid medical visits. Regarding the care of the indications and expiration date, specified in the medication, 75% mentions that they read them; 25% mentioned that they do not read them.

No statistically representative relationships were found between the gender, mother tongue, place of origin and self-medication condition variables.

DISCUSSION AND CONCLUSION

The percentage of self-medication in the population of university students is high (80%), although lower than the 95% found in the study previously performed on the open population, that is, self-medication in the general population of the same area (Reyes- Guillén *et al*, 2015). Also, it is lower than the one found by Soto Roa (2004) in the university population of the central zone of the same country, Mexico (96%).

Some studies carried out in other countries indicate a lower percentage of self-medication in university students (38%), and much less in the open population, 27.6% (Bassols *et al* 2002); but there is a coincidence with the groups of drugs consumed, analgesics and anti-flu drugs (Souza *et al*, 2011).

The results found in this study are similar to those found by Guillem *et al*., 91% (2010) and those found in studies for the university population of Argentina, 85% and Palestine, 98% (Sawalha, 2008).

Likewise, the results of this study prove that the reasons that lead people to self-medicate are pain and mainly do so to avoid going to the doctor and the expenses that this implies (Laporte and Castel, 1992). Therefore, it is important to discuss the characteristics of the study population, emphasizing the cultural diversity of the area. The study showed an indigenous population of 18% corresponding to university students of *Tsotsil*, *Tseltal* or *Chol*, whose customs are related to populations of Mayan origin. In this culture, self-medication and traditional medicine are a constant practice, currently applied not only to over-the-counter products or pharmacological specialty advertising, but also to patent and/or generic products without a prescription.

While it is true that the percentage of self-medication among university students in this study is high, it is also true that the type of medication they consume corresponds to the category of over-the-counter. Contrary to what was found in other studies (Laporte and Castel, 1992, Soto Roa, 2004, Sawalha, 2008, Souza *et al*, 2011, Reyes-Guillén *et al* 2015), the main

medication consumed is acetaminophen, followed by influenza drugs. It is very important to mention that they consume acetaminophen as an analgesic, regardless of the type of analgesic and its antipyretic nature.

Specifically, acetaminophen is associated with the development of neutropenia, granulocytopenia, pancytopenia and leukopenia; if it is consumed in a prolonged manner and in high doses, it can cause kidney damage and even hepatic necrosis and there are several contraindications for its use, for example, in patients with liver damage, who receive hepatotoxic drugs or who have nephropathy (Morón and Levy, 2002), these data are alien to the common knowledge of the population and, therefore, are vulnerable to negative consequences due to their use without specific medical indication.

As part of the results found, it should be noted that students self-medicate mainly with vitamins (42%) and deworming (10%). Regarding this, these results coincide with De Pablo (2011), having found in their study with university students the consumption of vitamin with 56% and deworming with 15%.

We can emphasize that the use of vitamins indiscriminately, may be due to the constant advertising in television and magazines, as mentioned by Baos (1996) and De Pablo (2011), and is associated with popular belief that improves performance academic and has commonly been used across generations.

Although several studies argue that vitamins are drugs with lower risk of toxicity and adverse effects, these depend, to a large extent, on the activity, gender, age and existence or not of primary alterations at the renal or hepatic level. Among the most frequent adverse reactions or side effects related to mega doses of vitamins, are diarrhea, anxiety or panic attacks, palpitations, insomnia, respiratory problems, chest pain, rashes and hives (Thomas, 2016).

On the other hand, regarding the use of deworming drugs, they are used in a habitual way by families as a response to the continuous advertisement, the previous thing, without knowing the specific uses of the different deworming chemicals that are offered for their purchase. The consumption of this type of drugs has contraindications such as in the case of acute diarrhea, headache, nausea, dry mouth and metallic taste depending on the chemical used. However, the consumption of deworming drugs plays a very important role not only for the treatment of parasitism, but they are also included within the different measures of public health and control, to reduce the transmission of these parasitic diseases (OPS, 2011).

The side effects of the use of deworming drugs are very varied and depend on the type of anti-parasitic ingested as well as its composition and range from mild gastrointestinal symptoms to serious cardio-logical, renal, hematic and even neuropsychiatric. Among the most frequent conditions are nausea, vomiting, headache, dizziness, dizziness, anorexia, diarrhea, exanthema, insomnia, poly neuropathies, arrhythmias (ssa, 2007).

In conclusion, responsible and knowledgeable self-medication could be useful for the first level of health care; this if the population was duly informed of the indications, contraindications and risks of self-medication. However, the results of the present study show that people are not properly informed in this regard and a high percentage do not read the instructions specified in the medications they consume.

Young university students should be a focus of attention to influence responsible self-medication, under health promotion schemes. It is necessary to design care programs that contemplate the cultural diversity and characteristics of each population, thus achieving satisfactory results without cultural barriers and affecting the achievement of community health.

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CONSERVATION OF A MICRO WATERSHED THROUGH SOCIAL PARTICIPATION IN THE NATURAL RESOURCE PROTECTION AREA "LA FRAILESCANA", CHIAPAS, MEXICO

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— *Abstract*—

The objective of this work was to strengthen social participation in the management of the micro watershed El Pando, taking water as a key resource for the conservation of the ecosystem in the Natural Resources Protection Area "*La Frailescana*". Through the application of qualitative methods and Participatory Action Research to residents of eight communities settled in the micro watershed, the processes of social organization, perceptions about importance, problems and knowledge about natural resources in this area were evaluated. In general (95.4%), the inhabitants think that it is very important to maintain the micro watershed, the water must be protected to conserve the forests because they give various environmental services such as the reduction of threats by floods, food, water and firewood, they also mention that there is contamination of water by inorganic trash and agrochemicals, in addition to logging of forests to establish pastures and agriculture. The inhabitants are willing to participate in actions that promote conservation. Finally, a space of social participation was built with the formation of the Advisory Council of the Reserve to prioritize conservation actions of the micro watershed.

Keywords

Social Participation, Water, Frailescana Chiapas, micro watershed

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For a long time water had been considered as an infinite resource, however, estimates of UNICEF and the World Health Organization (WHO) published in 2013 indicate that there are 768 million people in the world who lack access to this vital element (UNESCO, 2003 and 2006). In Mexico, the greatest demand for water lies in the population growth and economic activities of the agricultural sector (Irrigation Agriculture, Livestock and Aquaculture) with a consumption of 61.6 km3, equivalent to 77% of the total national water extraction, (CONAGUA, 2011a) have created areas of high water scarcity, both in regions of low rainfall and in areas where there was a high degree of availability and catchment, because the volume demanded is greater than the supplied one. This generates the search for new alternatives to achieve a more efficient water management, which considers social participation as a right on the part of citizens to express their opinions on issues that affect them directly, such as water, since it has different implications that range from social and economic to environmental (UNDP, 2012). The fact that citizens are involved and contribute their knowledge in the configuration of projects fosters positive and productive results (Osorio & Espinosa, 2001)

The viability in the management of a hydrographic watershed requires that the population involved participate effectively in activities that guarantee sustainability, working with a comprehensive vision of the state and community institutions that allow overcoming partial actions and temporary solutions. Adopting a watershed perspective, leads to the need to work with groups of rural agricultural producers or communities in a coordinated manner and this means understanding the social processes in which their productive activities are inserted, paying attention to social institutions and structures, locals as well as externals who design, implement and direct interventions, so that an adequate environmental management can be achieved, it requires effective social participation, as a fundamental axis of the process (Chávez, 2003).

The concept of social water management is taken as the interaction between a diversity of users, organizations and other institutional actors involved in the use and management of water and the environment in a micro-watershed for the taking of accepted decisions and the coherent implementation of actions regarding access and distribution, multiple use, conservation, as well as shared spaces and infrastructure within its territory. These strengthening actions generate changes in the self-esteem and attitude of the people, which contributes to their involvement and active participation, promoting the development of planning instruments. Among the program's impacts are: empowerment at a personal level, labor insertion and role in water management,

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strengthening of user organizations, development at the micro-watershed level, all according to the Regional Process of the Americas VI World Water Forum (Mora and Dubois, 2015).

The Protected Natural Areas (PNA's) provide the spaces for convergence for many actors that are in and around them, from residents to those who are concerned with the conservation and study of ecosystems and biodiversity. That is why the task of protecting these spaces of territory and their resources implicates the active involvement of these actors and there are several moments and stages in which participation takes place in an intense and organized manner. In the reforms of the General Law of the Ecological Balance of Environmental Protection (LGEEPA) of Mexico, social participation is established as an obligation in all phases of creation and management of a protected natural area (SEMARNAP, 2000).

The new social policy of the National Commission of Protected Natural Areas (CONANP) federal government agency in charge of its administration and management; part of recognizing that the conservation of natural resources is possible if you have the participation of the owners and owners of natural resources. The Strategy of Social Participation in Protected Natural Areas has as its objective: to constitute a broad social alliance, placing users and owners in the center of it to generate: a) Social commitment in the conservation of natural resources, b) Shared governance in the use of resources, c) Design of sustainable projects in accordance with the needs of the inhabitants located in the PNA's buffer zone and the potential of the territories and d) Coordinated participation of public institutions and external social cooperation.

The Natural Resources Protection Area (NRPA) "*La Frailescana*", where the study site is located, as in other protected natural areas of Mexico, conflicts between the conservation objectives of natural resources and those of human development of the populations that live in or around them, generating environmental problems such as the change of land use, deforestation, forest fires, hunting, use of agrochemicals and loss of quality, supply and access to water, due to the above, the objective of this work was to strengthen social participation for the management of a micro watershed by taking water as a key resource for ecosystem conservation in communities settled in the micro-watershed "*El Pando*" in the Natural Resources Protection Area "*La Frailescana*", Chiapas , Mexico.

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STUDY AREA

This work was developed in the Protected Natural Area "Natural Resources Protection Area *La Frailescana* (NRPA)" specifically in the Micro watershed "*El Pando*", which is part of Hydrological Region No. 30 Grijalva-Usumacinta, in the hydrological Sub-region *Medio Grijalva* or *Grijalva-Tuxtla Gutiérrez* in the Santo Domingo Hydrological Watershed, which contributes its flow to basin 18 "*Chicoasén*" Hydrological Dam between coordinates 15° 45` and 16° 21` North Latitude and 92° 32' and 93° 56' Longitude West (PEOT, 2002). It has a contribution area of 2,053.18 km², it originates near the town of *Raices del Tajín*, Municipality of Villacorzo and its main tributary is the Santo Domingo River that flows into the Grijalva River at the height of the town Cruz de Cupía, Municipality of Chiapa de Corzo It belongs to the Socio-Economic Region called *La Fraylesca* and the Sierra Madre Physiographic Region of Chiapas, composed of an extension of mountains that extends towards Guatemala with altitudinal elevations above 800 meters above sea level. The vegetation includes jungles and forests mainly. Among the Jungles there is the presence of High Evergreen, Low or Middle Evergreen Jungle, High or Medium Sub-evergreen Jungle, High or Medium Sub-deciduous Jungle, and Low Deciduous Jungle. The forests are made up of holm oaks, pine forests and deciduous forest. In addition to these formations, there are Savannas and Secondary Vegetation (*acahuales*) according to the vegetation classification of Miranda and Hernández (1963).

The predominant climate is sub-humid warm with a marked rainfall regime and precipitation in summer. The average annual temperature in the warm zones ranges between 22°C and 26°C, in the semi-warm zones between 18°C and 22°C. The lowest temperatures are recorded in small areas above 2,000 masl, where they range between 16°C and 18°C. During the months of May to October considered rainy, the minimum temperature varies from 12°C to 21°C and the average maximum temperature from 21°C to 34.5°C; the precipitation varies from 1,000 mm to 2,600 mm. For the months of November to April during the dry season, the minimum temperature ranges from 9°C to 15°C and the maximum from 21°C to 37°C. The precipitation during this period fluctuates from 25 mm to 300 mm (CEIEG, 2010).

Image 1.- Location map of the "*El Pando*" micro-watershed and study communities.

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Source: self-made

The municipality of Villacorzo, where the total of the micro-watershed *El Pando* is located, is considered to have a high degree of marginalization, where 40% of the inhabitants are in extreme poverty. For the micro-watershed, a total population of 2,299 people is estimated corresponding to eight *ejidos*: February 24, Monterrey, Nuevo Mitontic, Tierra Santa, Bonanza, *La Fraylesca*, La Unión and Nuevo Refugio (Image 1). Within these communities, the main economic activities that are presented are associated with agricultural-livestock production, such as corn, beans and coffee, as well as cattle farming (INEGI, 2010).

Chart 1. Population of the El Pando Micro-watershed, Municipality of Villacorzo Chiapas.

Municipality of Villacorzo	Micro-watershed *El Pando*	*Ejidos*	Number of people
		La Unión	44
		El Nuevo Refugio	177
		Tierra Santa	342
		24 De Febrero	158
		La Fraylesca	259
		Bonanza	102
		Monterrey	1,086
		Nuevo Mitontic	131
		Total de población	2,299

Source: INEGI. Population and Housing Census (2010). Corroborated by the Villaflores Health Sector.

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Based on the analysis of a satellite scene carried out in 2008, to identify the types of exploitation that are practiced and the bodies of water that are used, it was obtained that the vocation of the soil is basically forestry, corresponding to 91.1% of the territory (106,327.98 hectares), however, 8.9% has been modified by agricultural use (10,407.39 hectares), as well as the development of rural communities. (CONANP, 2008).

The Area presents a great number of currents produced by the ruggedness of the sierra; in the upper parts, the tributaries of the sub-watersheds of Santo Domingo, San Pedro, Presa La Angostura and *Cuxtepeques* drain their waters into the middle watershed Grijalva-Tuxtla of the Hydrological Region 30 Grijalva-Usumacinta. The existence of an exuberant forest cover contributes to the collection and cleaning of surface and groundwater, however, the contamination levels of the rivers and streams present are unknown, since in its interior and in the zone of influence the majority of the populations discharge their domestic wastewater and garbage.

METHODOLOGICAL PROCEDURE

Information gathering

For the collection of information between September 23, 2013 and April 30, 2014, the eight communities of the micro-watershed *El Pando* were visited. The survey was used as a technique for collecting data and was divided into three sections with 26 questions.

The first section measured socio-demographic type variables, the second section, assigns measurement to variables such as level of knowledge about the concept of micro-watershed and identification of environmental problems in relation to the water issue, which corresponds to the so-called environmental component and the third section refers to the socio-environmental component which integrates social participation in an environmental issue.

1. Identification of the problems in the micro-watershed *El Pando*.
2. Participation and Evaluation of Problems in the micro-watershed *El Pando*.

For the calculation of the sample size, the following statistical formula was used for a known population $N=Z_2\ Npq/(e_2\ (N-1)+z_2\ pq)$. Where "N" is the size of the total population that corresponds to 2,299 people, "Z" is the degree of confidence established for our case, according to tables of "z" with a value of 1.96, an α=0.05, that is, with a 95% confidence level. The value of

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"p", expected prevalence of the parameter to be evaluated or probability of success, it was considered to apply the most unfavorable option (p=0.05), which increases the sample size. The value of "q" that results from q=1-p and the value of "e" or allowed or expected error, which ranges from 2% to 6%, was adjusted to 5%. Finally, a rejection rate (PR) calculated in 10% of the sampling frame was included. The data provided by the calculation were 329 surveys applied.

Obtaining the number of surveys per community was determined based on the percentage obtained from: number of inhabitants-*ejido*/total population x 100, by the total number of surveys to be applied. The distribution of the number of surveys, resulted: 7 people *La Unión*, 26 people *El Nuevo Refugio*, 49 people *Tierra Santa*, 23 people 24 de Febrero, 36 people *La Fraylesca*, 13 people *Bonanza*, 155 people *Monterrey* and 20 people *Nuevo Mitontic*.

The application of the surveys was carried out in each of the *ejidos* with the informed consent of the authorities of each community and the persons interviewed. The surveys were applied to people over 18 years of age and more than 10 years living in the community. Once the application was completed, an identification sheet was assigned to each survey and a capture mask was designed with the Statistical Package for the Social Sciences Statistical Program (SPSS) version 17.

With the information collected and analyzed participatory workshops were applied using the group moderation *Metaplán*, which consists of all members participating in an equitable manner, without influencing individual opinions, seeking to facilitate concentration and understanding of ideas, using "voice, hearing and sight", this participatory tool uses visualization as a method of expanding the spoken word (Cisnado y Avila, S / F). The purpose is to leave blank spaces to give the possibility to add new ideas and contributions. Visualization reduces the danger of going in circles, helps to store ideas; the information is always accessible to all participants.

In these workshops, key players of the micro-watershed participated, among them representatives of the municipality of Villacorzo, ejidal authorities, civil society organizations and academic sector, decision makers and interested in applying actions to conserve water. Key or substantive, supporting or backing, and driving or cooperation factors were identified. Internally, each community of the micro-watershed chose two representatives to attend the workshops. Subsequently, the key factors were prioritized to obtain the most important ones, and were described in a neutral manner avoiding positive or negative trends, finally, the relationships between

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the factors were analyzed, future projections were developed for the most determining factors, and necessary measures were identified to guide the factors towards the desired scenarios.

RESULTS AND DISCUSSION

Interviews

329 people were interviewed, of which 53.5% (n=176) corresponded to women and 46.5% (n=153) were men, the average age for the eight communities was 35.7 years ranging from 18 to 69 years, presenting a greater range between 22 to 41 years (48.3%, n=159). With the data obtained in this section of the interview.

Regarding the level of studies, it was found that 40.7% (n=134) had primary education, 22.5% (n=74) did not attend school and only 5.8% (n=19) completed a university degree. With regard to their occupation, all women are housewives and men 84.3% (n=129) work in agriculture and small scale cattle (>10 animals). 80% (n=263) was born or has more than 20 years of living in the community. The majority of the population works in the field from an early age obtaining knowledge mainly by parents and grandparents. This is partly due to the high degree of marginalization of the micro-watershed communities, according to data from the National Population Council (conapo, 2010).

For the interviewees, the micro-watershed concept consisted of a river, stream and surrounding stones for its protection, considering that it must be protected because there is a close relationship between water conservation and the forests and that these in turn provide a better quality of life referring to reduction of environmental threats (fire, floods), obtaining resources such as food, water and fuel (firewood). For 60.5% (n=199) there is currently a problem related to water, mainly due to contamination by inorganic waste, use of agrochemicals for agriculture, forest fires and the opening of roads in the area. For those who consider that in relation to water there is no problem, 39.5% (n=130) indicated that there is enough water and not contaminated since the forests are in good condition. 89.3% (n=294) of the inhabitants indicated that they are aware that community participation is important in order to plan activities related to the conservation of natural resources in the long term, which will allow them to maintain them in good condition and therefore a better quality of life.

The contamination of the water resource associated to the intensive agricultural activity, with the excessive use of agrochemicals, was one of

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the most frequent responses, since it affects the health and well-being of the inhabitants of the Micro-watershed, a fact that is corroborated by a local study carried out in 2015, to know the water quality within the area, through the measurement of the *Índice de Calidad de Agua* (ICA), proposed by Brown, modified version of the WQI (Water Quality Index). In this analysis, it was identified through indicators such as phosphorus and chromatographic sweeps that surface water runoff have been affected by industrial fertilizers, agrochemicals and pesticides (CONANP, 2015). The intervention of *ejidal* actors through the application of their internal, municipal, state, and federal regulations regarding the application and compliance with laws and regulations related to natural resources could reduce the pressure that the use of agrochemicals causes to the environment.

In general, the majority of the surveyed population (95.4%) considers it of the utmost importance to conserve the micro-watershed *El Pando* as a producer of fresh water, and is willing to participate in actions that promote its conservation. The answers show a certain degree of environmental sensitivity, and certain values such as solidarity, would allow detonating processes for the rational and sustainable use of the resource, which guarantees the satisfaction of future generations. The reasons for protecting it range from the enjoyment of it, health aspects, economic and ecological benefits and specifically the valuation of water as a source of drinking water and for the development of productive activities.

Workshops

Five participatory workshops were held between the months of September and December 2014, attended by 17 people on average (n=136) in a proportion of 45.5% (n=61) women and 54.5% (n=75) of men, interspersing headquarters in different communities.

The topics addressed were:

- "*La Frailescana*", background and zoning
- "*La Frailescana*", scenario 2040 (Water theme was addressed)
- The Advisory Board, Structure and Functions
- Process for appointing directors
- Internal Rules of the Advisory Board

The term scenario was conceptualized, this in order to put in context those attending the workshop in the construction of a vision for the micro-

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watershed for the year 2040, in such a way that the following questions were answered: Where do we want to go, where do we see ourselves in the future?

STAGE

It represents something high, more visible, something important, activity (drama, representation), let's see something (balcony), see the mistakes that were made and do better.

At the workshops it was discussed the environmental problems of the micro-watershed, the organizational relationships that exist within it, the conflicts generated both by the access and by the availability of water resources and the regulation of state entities, individual and collective actions for the management of the micro-watershed and the institutional framework surrounding natural resources in the area, as a result nine factors were identified, ten attributes and 14 processes and obstacles in relation to the management actions of their natural resources for the micro-watershed *El Pando* (Table 2, 3 and 4).

Chart 2.- Favorable and unfavorable factors identified in the workshops in relation to natural resources management actions in the *El Pando* Micro-watershed, municipality of Villacorzo Chiapas

Favorable factors	Unfavorable factors
Have a dialogue (Communication between communities)	Clandestine forest clearing
Unification	Forest fires
Obey the rules between peers	Fires without measure
Being responsible	Plagues and diseases
Work together	Litter anywhere
Organization of all as a single team, to achieve our purpose.	Continue as we are
Organize to reforest the clearing areas, conduct controlled burning reduce agrochemicals, collect garbage.	Not wanting to work
	Not having interest
	Do not taking it seriously
	Do not take us into account
	Not value what we have
	Not loving nature
	Not supporting ourselves

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CONANP counseling for the communities	The government's lack of interest in the project
Conduct workshops or courses.	Carelessness of the authorities
Have love for nature, be better trained and know more	Not receiving resources fro government institutions
	Lack of counseling
Increase awareness	Disorganization
Awareness of each member of the residents of the NRPA "La Frailescana"	
Working together to care for the environment and reforest	
Do not litter in streams and rivers. Avoid destroying with hunting.	
Apply regulation	

Table 3.- Attributes they have and that they wish to acquire in relation to the management of natural resources in the El Pando Micro-watershed, municipality of Villacorzo, Chiapas

Attributes they have	Attributes they wish to acquire
Training	Manage the payment of environmental services and productive projects
Government Advisory especially from the National Commission of Natural Protected Areas (CONANP)	Projects and economic supports
	Nursery and coffee projects
	Resources for the renewal of coffee plantations, pests and diseases
We have different animals (jaguar)	We need temporary jobs and productive projects
We have water, basins, springs	More government support
We have flora	To have resistant seeds
We have well-kept forests	Resources to achieve our goals
	We need resources to get ahead
Coffee projects	Have more coffee machines (toaster, reclaimer, pulper and drying yard)
Tourism approved projects	We need a dryer
Unit for the Sustainable Management of Wildlife	Infrastructure, pasture chopper
UMA´s forest exploitation	Infrastructure, yard, tank. Machinery
	A sawmill to machine the wood
Training on land use	Recognized marketer
Knowledge in oraganic product management	Incorporate ourselves into the productive chain for a better life condition
Knowledge Biological Control	
Organic certification	

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Organization of coffee production	We need training; we need economic resources, we need productive projects so our economic situation improves and people can be encouraged to take care of the environment
Legal organization	
Organization and planning	
	Soil conservation in coffee plantations
	Technical assistance
	Training for exportation
	Training, coffee (certification) counseling and follow-up
Brigades against forest fires	We need interest in ourselves
Equipped and trained community brigades	Transportation
Trained brigades	

Table 4.- Processes and obstacles identified in the workshops in relation to the management of natural resources in the El Pando Micro-watershed, Villacorzo municipality

Processes and obstacles
Lack of information
We are not being taken into account
The institutions do not give us any real answers to our petitions
A lot of stationary
A lot of requirements are needed for government dependencies
A lot of paperwork for projects
Government responsibility
Window times
On time dissemination of the projects in *ejidos*
Not have a qualified technician
Abuse of officials
Rip-off technicians (thieves)

Social participation

Thus, from the analysis of the scenarios, factors and their relationships, it was determined that the social management of water is the theme and axis generating other aspects of sustainable local development, and those factors that contribute to the inhabitants of the micro-watershed El Pando managing what is necessary to make an adequate use and management of water, improve decision making, execution and evaluation of the same that will be determined in the attention of the following four factors in order of priority:

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1. Project development
2. Development of capacities for water management in the micro-watershed (Organization)
3. Water management and development research (Conservation of forests)
4. Counseling with less bureaucracy

Finally, as an area of participation, an "Advisory Council" was created for *La Frailescana* Reserve, which was legally based on the General Law of Ecological Equilibrium and Environmental Protection in Article 159, giving it legal certainty and thus strengthening it with governmental participation and of Non-Governmental Organizations (Aguilar *et al*., 2009). This council will be the facilitator and counselor of the processes, in charge of promoting and guiding the critical analysis and reflection of the participants, of promoting dialogue, without interfering in the decisions that the group makes, of providing information about the most relevant aspects of the external environment and the problem to be treated, as well as the way to achieve it, interpret it and use it, which indicates that it is sustainable over time. The strengthening of local capacities and organization are fundamental to contribute to the socioeconomic and environmental development of the study population. The most important thing is the investment for the creation of competitive human capital through education and the creation of more remunerative work opportunities that allow fulfilling the 2040 vision for the micro-watershed *El Pando*.

The micro-watershed in this study is proposed as a planning area for natural, material, human and financial resources for the Natural Resources Protection Area "*La Frailescana*", which occupies a considerably large area for the staff of the National Commission of Protected Natural Areas that attends directly. From the operational point of view, the planning of the area considers that it is important to work at the micro-watershed level, since the area has limited resources; so it is important to know where the money, the hours and the effort invested can lead to the greatest impacts. This is the fundamental reason for prioritizing the goals and, mainly, the areas of intervention within a watershed. Taking the micro-watershed as an area for planning actions aimed at introducing changes in production systems, seeking to reconcile and integrate the objectives of production and protection of natural resources, is a technical and strategic option dictated by the nature of the interactions between these resources.

The size of this micro-watershed is defined by its nature and by certain operational adjustments based on the capacities of government and non-government institutions linked to its management and development. In this

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case, "*El Pando*" will also be attended by the Advisory Council, which is made up of representatives of each of the eight *ejidos* that comprise it, that is, they will be the ones who generate skills to manage what is necessary to develop their local capacities, research and development projects.

CONCLUSIONS

It is concluded that the planning for the integral use of micro-watershed facilitates the perception of individuals and the community about the interactions between production (use and management of resources by humans) and the behavior of natural resources used to production (soil, water, forests). In this way, a greater awareness of the need to promote changes in one's own way of acting is favored.

The Social Management of water in the *El Pando* micro-watershed should guide its actions based on a participatory process through the Reserve Advisory Board that helps identify and prioritize its main problems, and participate in the preparation of an action plan that try the resolution of them.

The female gender, showed an active and enthusiastic participation in this research process, which infers an important role in decision making, so its participation is paramount. Enabling the empowerment of women will enable the participation of all actors in the development of the region. In this sense, the use of land that is currently being carried out is not favoring the management or sustainable use of water resources, nor are there any incentives that encourage the adoption of sustainable agricultural practices and permanent protection of water resources, which is why it is proposed to participate in programs for payment of environmental services.

In short, the integral management of the soil and water resources of the micro-watershed *El Pando* should take advantage of the participatory potential of the social actors living in the study region by inserting primarily small producers through the formulation of initiatives aimed at conserving, regenerate and make sustainable use of natural resources.

THANKS

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DIGITAL INSTITUTIONAL REPOSITORIES AND THE OPEN ACCESS AS A TOOL FOR ACADEMIC CONTENT DIFFUSION

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— Abstract—

The purpose of this article is to analyze the current situation of digital institutional repositories in countries such as Spain, Costa Rica, the United States and Mexico, as well as the recommendations made by initiatives as Budapest, Bethesda, Berlin or Alhambra to contribute to the open access, keeping in mind the General Guidelines for the National Repository and Institutional Repositories published by the National Council of Science and Technology in Mexico (Conacyt) in 2014, which is part of the new federal government's strategy to meet the demands of having a means of consultation of the products generated in research centers, universities and public institutions financed with public resources. In addition, the results of a study that indicate the growth, development, benefits and importance of institutional digital repositories are presented, as well as the challenges that imply their implementation.

Keywords

Repositories, open access, Conacyt, Ranking web.

The diffusion of science and culture is a complex task. It involves large conceptual and linguistic dimensions. In this research project an analysis is made of the digital repositories' growth and development within higher education institutions.

After the development of ARPANET in 1969, a technological revolution began for the exchange of data between computer equipment without geographical limitations. This technological advance allowed to create what is now known as the internet.

The scientific publication in electronic media is achieved thanks to the development of ArXiv in 1991 by Ginsparg, who began to make use of information technologies and took advantage of this tool. Consequently publications in digital media have created the need for licenses that protect copyright, limit total or partial access to the results of research published by scientists, academics, technologists, students, teachers, etc., creating barriers that hinder its dissemination.

Publications in electronic media have increased considerably due to the exponential growth of Information and Communication Technologies (ICT). We now live in a time of constant changes in society's lifestyle, which in an accelerated way introduces new generations to the excessive use of electronic and/or mobile devices. For the purposes of this research we will focus on mobile devices such as the Smartphone, Tablet and Laptop.

According to Zambrano (2009), ICTs are: multiple technological tools dedicated to storing, processing and transmitting information, making it manifest in its three known forms: text, images and audio.

The purpose of publication and storage is to publicize the results of the research carried out and make them available to everyone, as well as all the academic materials that are generated by higher education institutions.

Given the growing mass production of information that is stored on the network, the task of recovering the desired information, applying filters, debugging content becomes complex and if it were not for the same tools that have been developed in parallel to the internet, it would be impossible!

Therefore to spread science you need a medium available all the time and for everyone, one which they can access without restriction. When we talk about open access, it means that it does not need a subscription, free, without requiring a license, user or password. With open access the availability of

these materials is guaranteed to everyone who has an electronic device with internet access. (Cetto, 2015)

The purpose of this research is to analyze, through a qualitative approach, the social impact of an open access digital repository, as a tool for the dissemination of academic and research content, making use of new technologies for the exchange of information over the Internet through mobile devices. As a result of this research, the state of art in Mexico's institutional repositories is described from the repository world web ranking, the criteria that are considered to belong to this ranking are explained, as well as the policies used by other repositories. This allows having a reference and knowing the benefits of having a repository developed under standards and taking into account international recommendations and especially incorporating new technologies for mobile devices.

METHODOLOGY

The present research is a qualitative documentary type in which an exploratory descriptive research is carried out, in order to unveil everything that until now other national and foreign universities have achieved through the implementation of the institutional repositories and the benefits to contribute to the open access initiative.

Non-probabilistic sampling was used intentionally or for convenience to a group of experts related to the dissemination, disclosure and creation of academic and research materials, a questionnaire was applied and the results were obtained from the Autonomous University of Chiapas, University of Sciences and Arts of Chiapas and the National Autonomous University of Mexico. In addition, a documentary study was carried out to learn about the advances that the University of Costa Rica and the University of Salamanca have achieved in terms of repositories.

The sample was integrated by teachers, researchers, administrators and directors of universities and research centers, with a total of 32 questionnaires. It is worth mentioning that the questionnaire was applied in digital and printed format. Finally, a series of recommendations is proposed for the development of an open access digital institutional repository.

DIGITAL INSTITUTIONAL REPOSITORIES

The production of academic and scientific materials from universities has been increasing and accelerating as ICTs allow access to a greater number of in-

formation sources. In addition, universities establish within their organic laws or academic projects to promote and boost academic productivity to meet the needs that society demands. When a large quantity of digital materials is generated in a wide variety of formats such as text, images, audio and video, a place to deposit them is required to preserve them and then consult them.

In general terms, a repository is a place or space where certain things are stored. According to Bongiovani (2010) a repository is, "a collection of digital objects based on the web, on material... produced by members of an institution (or several) with a defined policy...", the Mexican Network of Repositories takes up the definition given by Ernest Abadal in 2012 and mentions that a repository is: "a website that collects, preserves and disseminates the academic production of an institution, allows access to the digital objects it contains and its metadata".

On the other hand Bustos and Fernández (2009) mention that an institutional repository is, "an electronic file of an institution's scientific production, stored in a digital format, in which the search and retrieval is allowed for later national or international use.

Lynch (2003) cited in Melero (2008) refers to university institutional repositories as the "set of services offered by the University to the members of its community for the direction and distribution of digital materials created by the institution and its members. An organizational commitment to the administration of these materials is essential, including long-term preservation when necessary, as well as the organization and access or their distribution".

Finally, the Law on Science and Technology in its article 4, section XII, establishes that a repository is "the centralized digital platform that, following international standards, stores, maintains and preserves scientific, technological and innovation information, which is derived from research, educational and academic products." (DOF, 2014)

There is a variety of repositories according to their content or entity in charge of their development, implementation and maintenance. The criterion most used to distinguish repositories takes into consideration the main objective for which it was created. Abadal (2012), Redalyc and UAMex (2013) mention that there are two types of repositories:

- Institutional: Contain information of the members of an institution, be it a university or a research center. They have a multidisci-

plinary nature. Sometimes they focus exclusively on scientific content (journal articles, theses, congresses, etc.) but there are also examples of inclusion of teaching material, administrative documentation, heritage collections, etc.

- Thematic: Its contents are specialized in a specific scientific field. The creators can be academic institutions, public bodies and non-profit organizations.

Digital or virtual libraries have boomed in recent years and are an option to classify and organize materials that will later be made available to university students and the general public. However, prolific production requires platforms or more dynamic means to retrieve information without requiring prior knowledge on the cataloging of content as traditionally handled in a library.

Therefore, the purpose of an institutional digital repository is to recover all that material created by the university community and to house it in a single place where it can be made public, available all the time without limitation of the geographical area or access accounts. To achieve this, policies are required to regulate the production, distribution and preservation of said materials.

GENERAL STATUS OF DIGITAL REPOSITORIES IN THE WORLD

Digital repositories in Latin-America

The Latin American Council of Social Sciences (CLACSO) is an international non-governmental institution, created in 1967 that maintains formal relations of consultation with UNESCO. Its objectives are the promotion and development of research and teaching of the Social Sciences; the strengthening of exchange and cooperation between institutions and researchers within and outside the region; the proper dissemination of knowledge produced by social scientists among social forces and movements and civil society organizations.

The documentary repositories in Latin America and the main directories that gather the information of the existing data providers, where the same institutions have registered themselves, are the following:

- Directory of open access repositories OpenDOAR
- Registry of open access repositories ROAR
- The list of data providers of the open archives initiative
- Installed DSpace Instance Directories
- OAISTER's list of repositories

- List of Repositories of the ScientificCommons search engine
- List of ARC repositories
- OAI-PMH's registry data providers of the University of Illinois

The Sedes Sapientiae Catholic University (UCSS) of Lima Peru has developed a digital institutional repository under the concept of being "the technological platform that gathers, preserves, allows access and disseminates digital documents of the entire university community." (UCSS, 2016)

Its objectives are:

- Centralize the digital documents of the University
- Disseminate the research carried out by students, teachers and members of UCSS
- Organize the digital documents of impact on the research and culture of the University
- Facilitate the participation of the University in information exchange initiatives, worldwide
- Allow the obtaining of statistics of the digital documents, which will contribute in the analysis of the scientific and cultural production of the UCSS
- To be a means of verification of research for national and international regulatory bodies

The repository of the UCSS contemplates within its policies that the thesis files must be delivered in editable Word and PDF format. These must contain the title of the thesis and the author's name. In addition to that the disc should include the executive summary written by the author. (UCSS Policies, 2016)

Additionally, it establishes that when submitting the materials, a format must be filled out indicating the type of access that will be granted to the materials.

- Public: The authors authorize, at once, for the material to be consulted and published in the Digital Repository or other media, all research work to full text.
- Restricted: The authors authorize that only the metadata be shown, but not the full-text PDF file.

On the protection of Copyright, the Library (in charge of managing the contents) according to the current legislation of the UCSS, to make the dissemination of research content free access to information will be provided by electronic means, prior agreement and base on a commitment letter that the

library gives to undergraduate and graduate students, where the authorship of the materials is specified and the rights of the students are protected.

To remove any content from the repository of the ucss, it is established that it can only be done under the following conditions:

- When accusations of defamation, plagiarism or violation of third party rights occur
- If it is that said work is going to be edited or published as a book
- The author is going to patent such work
- Other reasons that merit withdrawal

The University of Costa Rica also has an open access repository available to the general public: The Institutional Repository of the University of Costa Rica *Kérwá*. It was implemented since July 2010 to store, disseminate and preserve the scientific and academic production of the University of Costa Rica. "The name of the repository is inspired by the analogy between the body of institutional knowledge and *kérwá*, a cultural concept of the cabécar to name the set of stones that the *jawá* (indigenous doctor) uses in ceremonies to find answers to his questions." (Repository Kérwá, 2016)

According to the University of Costa Rica, the Kérwá Institutional Repository is "a digital archive that stores, disseminates and preserves the scientific and academic production of the University of Costa Rica (ucr). It offers open access to books, technical and working documents, articles, theses, audio and video records, research reports, among others. This repository began operating in mid-2010 and was declared an Institutional Repository in 2013." (Repositorio Kérwá, 2016)

Its objectives are:

- Offer free and full text access to the research products generated at the University of Costa Rica
- Encourage self-deposit of scientific and academic production of the University to share it with other academics and users in general
- Provide the authors of the University with an online tool to give visibility to their work

In addition, its Data Policy contemplates that:

- Kérwá is an open access repository. Anyone can download the documents for free and without registration.

- The documents deposited here can be downloaded, copied, reproduced and delivered to third parties provided it is for educational or research purposes.
- Some of the documents in this repository have different distribution licenses and permits. Please, carefully check the details of the license.
- Commercial use of any of the documents is not allowed, unless it is specified in its license. If you want to make different use than allowed by the license, please contact the owner of the property rights.
- If you wish to use the documents in the Kérwá you should always indicate the name of the author and the title of the work, as well as the other bibliographic data required for the elaboration of the references. In addition, it must include a link to the original document and guarantee the integrity of the work.
- This is an auto-deposit repository and does not count as a publisher, it works only as an online file.
- The mention of the Kérwá Repository is appreciated, but it is not mandatory.

Content policy:

- Kérwá is the Institutional Repository of the University of Costa Rica and accepts a wide variety of documents as long as they are products of academic or research activities. These can have different versions: work drafts, revision versions (of a document that was sent to peer review journals), accepted versions (the author's final version with the peer-review), and published versions (files created by the editor or final layout).
- Each document is described individually with its publication status.
- The main languages of this repository are: Spanish, English, Portuguese and French. Documents in other languages are also accepted

Digital repositories in North America

In recent years, global projects have been carried out based on the digitalization of academic and scientific contents in different formats, for their preservation, storage and dissemination in information systems. These initiatives come from content management systems, from software development proposals based on information retrieval in the network.

For example, the World Digital Library (WDL), headquartered in Washington, DC, has approximately 15004 articles from 193 countries. The WDL, "makes

available on the Internet, free of charge and in multilingual format, significant primary materials from all countries and cultures." (WDL, 2016)

Its objectives are:

- Promote international and intercultural understanding;
- Expand the amount and variety of cultural content on the Internet;
- Provide resources to educators, scholars and the general public;
- Build capacity in partner institutions to narrow the digital divide within and between countries.

About Copyright and Collections states that: "Content found on the WDL website is contributed by WDL partners. Copyright questions about partner content should be directed to that partner. When publishing or otherwise distributing materials found in a WDL partner's collections, the researcher has the obligation to determine and satisfy domestic and international copyright law or other use restrictions."(BDM, 2016)

Digital repositories in Spain

The European Library, "is a digital library that houses the contents of 48 European libraries. Various materials such as books, posters, maps, sounds, videos available in 35 different languages to open the universe of knowledge, information and cultures of the different states of the European Union. This library is the embryo of the European digital library: Europeana. This initiative of the European Commission covers not only libraries but also museums, archives and other holders of material cultural heritage." (Universia, 2015)

In Spain, the only existing policies are those of the recent calls for projects of the Community of Madrid, those of the CSIC and those of the Madrilenian Universities Carlos III and Rey Carlos I. (Abad, 2009)

Some Spanish institutions have joined the *Open Access* initiative by developing institutional policies that recommend or require, where appropriate, the deposit of the scientific material produced by the members of the institution in the institutional repository. Abad (2009) mentions that they often refer to the need for documents produced by an institution, or the result of projects financed by certain calls, to be open and available for universal access and use. To do this, authors can choose one of the two existing ways to put this into practice: Open access journals or repositories. Such is the case of:

- The University of Liège (University of Liege (*Université de Liège Institutional Mandate*)
- Polytechnic University of Catalonia

OPEN ACCESS

Open Access is a change of model in the functioning of scientific communication that, at this moment, is not free. Since licenses have to be paid for the use and, in addition, most of the contents are under rights or licenses of use. However, open access is a paradigm shift, a revolution that wants to change the science communication system from head to toe.

Open Access (OA) is a movement that was unveiled just over 10 years ago, with the signing of the first declaration in Budapest (2002), followed by that of Bethesda (2003) and Berlin (2003). The emergence of this movement in Europe and North America is mainly due to the increase in the cost of research journals (Cetto, 2015)

Peter Suber (2006), one of the main theorists on open access, mentions that the "Open-access literature is digital, online, free of charge, and free of most copyright and licensing restrictions". Mentions the two main characteristics or conditions so that the contents are open access: they must be free of charge and free of restrictions for their exploitation, that is, that users in general can copy, print, modify, distribute, etc., as long as mention is made of the author and source.

The Law of Science and Technology in Mexico in article 65 mentions that:

> *Open Access means access through a digital platform and without subscription, registration or payment requirements, to research, educational, academic, scientific, technological and innovation materials, financed with public resources or that have used public infrastructure in its realization, without prejudice to the provisions on patents, protection of intellectual or industrial property, national security and copyright, among others, as well as information that, by reason of its nature or the author's decision, is confidential or reserved*

There are 4 historical statements that contributed to the creation of national policies on Open Access:

Table 1. Statements that contribute to Open Access.

Statements	Description
Budapest (2002)	Scientists and academics interested in publishing and increasing the visibility of their research results, opt for the use of new technologies, specifically the use of the internet. It includes the electronic distribution reviewed by pairs without restrictions. Newspaper publication.
Bethesda (2003)	The objective was to agree on significant steps and to support scientific research, scientists who generate research results, editors who facilitate peer review and the distribution of research results. The author (s) will grant free and irrevocable right to copy, use, retransmit and make derivative works giving recognition to the author. The full version should be deposited in at least one repository.
Berlín (2003)	The mission of disseminating knowledge is incomplete if the information is not made available to society in an expeditious and comprehensive manner. Future web must be sustainable, interactive and transparent. The content and software tools must be freely accessible and compatible.
Alhambra (2010)	The idea of having a design of alternative and sustainable editorial models is proposed, with which a study on the current models to document the practices and economies in the academic publication will be initiated in order to support future plans and actions. Fulfil with international guidelines and standards to increase editorial quality and eliminate embargo policies. Regarding the repositories, the importance of advancing in the validation and certification of the repositories was emphasized, defining clear policies (author rights, preservation, work flows, what is deposited and by whom) and improving interoperability.

Source: Own elaboration based on data from the Budapest, Bethesda, Berlin and Alhambra declarations.

The previous table shows the importance of repositories and the need to have a tool where free academic content can be stored and distributed free of restriction and how electronic publications have to make use of new technologies to expand their horizons and achieve greater dissemination of knowledge based on international standards, editorial policies that guarantee the quality of the stored contents.

OPEN ACCESS POLICIES

Many countries and institutions that have taken the initiative of open access are implementing measures that contribute to the dissemination of knowledge, to eliminate obstacles that prevent their access to materials made with public resources and create guidelines that allow their development.

Alma Swan (2013) assures that the development of a policy is of crucial importance for the progress of open access, and having a structured process is the best way to ensure the impact of a good policy.

In total, there are 796 Open Access policies adopted by institutions that are in force, which are distributed as follows:

Table 2. Distribution of Open Access policies.

Researching financiers	81
Research organizations	54
Multiple organizations that conduct research	9
Higher education institutions	581
Faculties or research centers	71
Total	796

Source: Own elaboration based on ROARMAP 2016 data

Image 1. Mandatory Open Access policies growth by quarter
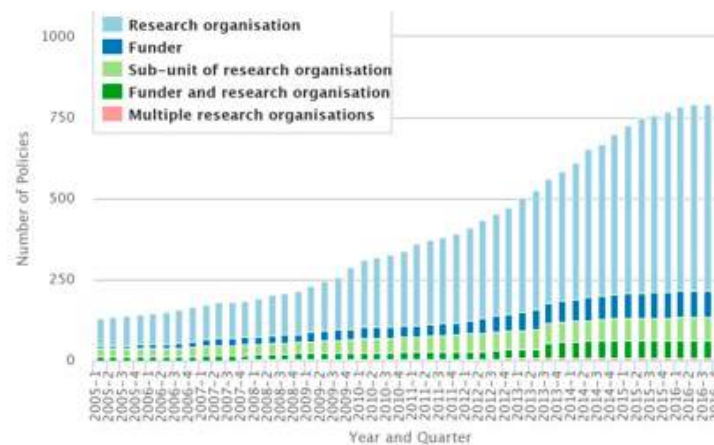
Source: ROARMAP, 2016

Open Access policies are essential for the proper functioning of Open Access on both the green and golden roads. Higher education institutions

must be very specific and design policies that adapt to their needs, which allow the production and dissemination of their academic productivity. Image 1 shows the growth that these policies have had in recent years.

The Institutional Policies oblige the authors to use the institutional repositories as storages. This not only allows them to benefit, but the institution is the one who stores and preserves the contents, makes available to the entire community all the materials to be consulted without any restriction. In terms of research management, the repository is a valuable tool. (Swan, 2013).

In Mexico only 3 institutions have adopted mandatory use policies for open access in 2013 as can be seen in image 2. The institutions registered with these policies are:

1. Autonomous University of Nuevo Leon
2. Autonomous University of the State of Mexico
3. Electoral Court of the Federal Judiciary

Image 2. Mandatory use policies adopted in Mexico
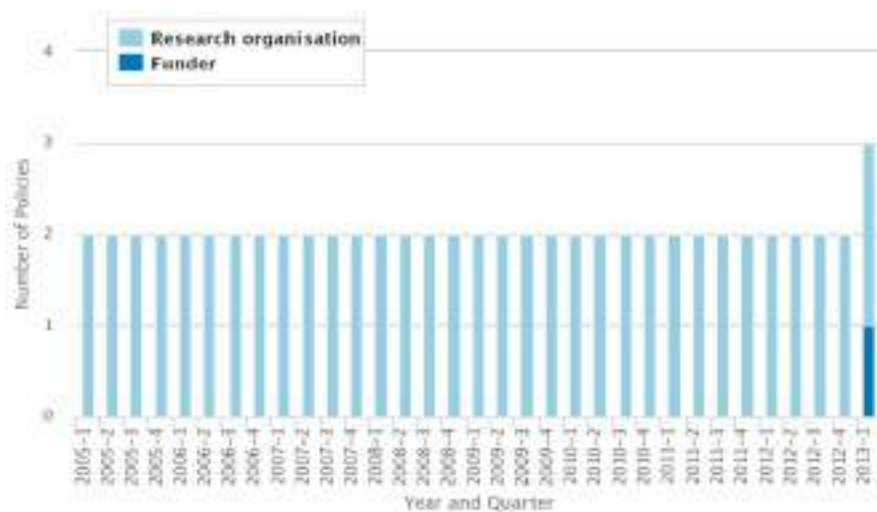
Source: ROARMAP, 2016

REPOSITORIES WEB RANKING

In the present work, we obtained data from the Repository Web Ranking, with the purpose of analyzing the growth of public and private institutional repositories throughout the world. The Ranking of Repositories operates

under 4 parameters (metrics or impact factors)[1] to globally determine the location of each repository in its list.

1. Size: 10% of points are awarded to repositories that intend to provide full-text documents, bibliographic records or summaries. Mainly those that are within the *Open Access* initiative.

2. Visibility: 50% of points are awarded based on a virtual "referendum" where the opinion on the repository's content is extrapolated from external links or citations. The methodology from which this data is obtained is being adjusted, considering that many of the data sources have been or can be altered or modified to obtain a better qualification.

3. *Files Rich*: With the development of web 2.0 and technological innovations, the growing number of social platforms, the diversity of electronic devices that can connect to the Internet, the Web Ranking has considered the use of tools such as Academia, Bibsonomy, CiteUlike, CrossRef, Datadryad, Facebook, Figshare, Google+, GitHub, Instagram, LinkedIn, Pinterest, Reddit, RenRen, ResearchGate, Scribd, SlideShare, Tumblr, Twitter, Vimeo, VKontakte, Weibo, Wikipedia (all languages), Wikipedia English, Wikia, Wikimedia , YouTube and Zenodo, to grant a 10% of points needed to qualify and be within the Ranking of Repositories. Considering that repositories are repositories for archiving documents, the aforementioned platforms are needed to promote and improve the dissemination of contents in a universal and visible way thanks to web 2.0.

4. *Scholar*: 30% of the remaining points are obtained from a collaboration with Google Scholar, where repository indexed data are collected that determine the quality in the way of presenting the contents, whether in full text (preferably) or in parties (usually generate empty records and a large number of independent documents that make it difficult to recover the entire document).

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1   Repositories web metrics. 2017 first edition (January data). http://repositories.webometrics.info/en/node/29 Retrieved on February 7, 2017

Table 3. Top global repositories by institution

World Rank	Portal	Country	Tamaño	Visibility	Files Rich	scholar
1	(1) Smithsonian/NASA Astrophysics Data System	🇺🇸	1	1	1	1
2	NASA Technical Reports Server	🇺🇸	126	5	2	2
3	University of California eScholarship Repository	🇺🇸	298	2	3	9
4	CERN Document Server	🇨🇭	2	13	6	7
5	MIT Institutional Repository	🇺🇸	108	3	6	30
6	University of Nebraska Lincoln DigitalCommons	🇺🇸	421	7	4	17
7	HAL Sciences de l'homme et de la Société	🇫🇷	89	8	14	32
8	Universidade de São Paulo Biblioteca Digital de Teses e Dissertações	🇧🇷	111	10	33	8
9	University of Michigan Deep Blue	🇺🇸	136	9	7	93
10	Universiteit van Amsterdam Digital Academic Repository	🇳🇱	118	30	17	3
11	HAL Institut National de Recherche en Informatique et en Automatique Archive Ouverte	🇫🇷	58	11	13	40
12	University of Queensland UQ eSpace	🇦🇺	72	15	19	25
13	Universitat Autònoma de Barcelona Dipòsit Digital de Documents	🇪🇸	41	34	24	4
14	Queensland University of Technology Institutional Repository	🇦🇺	200	14	8	56
15	Virginia Tech University Digital Library and Archives	🇺🇸	670	4	8	347
16	Digital CSIC	🇪🇸	79	26	28	25
17	University of North Texas Digital Library	🇺🇸	24	18	12	103
18	UPCommons Universitat Politècnica de Catalunya	🇪🇸	12	36	29	19
19	Lund University Publications	🇸🇪	40	45	36	5
20	University of Southampton Institutional Repository	🇬🇧	16	22	22	79
21	Purdue University Digital Commons	🇺🇸	647	21	15	33
22	University of Illinois at Urbana Champaign Ideals	🇺🇸	32	37	26	29
23	Repositorio Digital Universidade Federal do Rio Grande do Sul LUME	🇧🇷	8	61	51	11
24	University of Helsinki HELDA	🇫🇮	410	20	32	52
25	University of Pennsylvania ScholarlyCommons	🇺🇸	791	16	18	80

Source: Repositories Ranking Web, July 2016

In Table 3: It can be seen that at a global level, two NASA repositories occupy the first and second positions, followed by the University of California repository, which started operations in 2002 and manages an *Open Access* policy. It contains around 124,283 publications and has indexed 90 journals with a total of 34,924,221 visits from 2002 to February 07, 2017.

Table 4. Top institutional repositories in Mexico

ranking	World Rank	Instituto	Tamaño	Visibilidad	Ficks Rich	scholar
1	561	Repositorio Institucional de la Universidad Veracruzana	350	523	349	1114
2	568	Repositorio Digital Institucional Instituto Politécnico Nacional	486	819	521	348
3	651	Repositorio Academico Digital Universidad Autonoma de Nuevo León	945	944	703	258
4	833	Repositorio Institucional Universidad Autonoma del Estado de Mexico	658	1131	638	595
5	966	Tesis Institucionales Instituto Politécnico Nacional	799	928	506	1140
6	1157	Universidad Autónoma de Querétaro Repositorio Institucional	1218	1479	1158	646
7	1473	ITESO CONACYT Documentación en Ciencias de la Comunicación	1649	1323	830	1603
8	1527	Repositorio Institucional Universidad Autonoma del Estado de Hidalgo	799	1765	1265	1196
9	1649	RAD Repositorio Institucional Red de Acervos Digitales UNAM	1344	1227	880	1988
10	1698	Ninive Repositorio Institucional de la Universidad Autónoma de San Luis Potosi	1480	1879	1281	1120
11	1851	Universidad Autónoma Metropolitana Unidad Iztapalapa, Tesis Electronicas TESIUAMI	2205	1499	914	1965
12	1992	Repositorio Institucional de acceso abierto del Tecnológico de Monterrey	1272	1038	1027	1183
13	2245	Tesis Digitales El Colegio de México	2213	1932	1487	2014

Source: Repositories Ranking Web, July 2016

In table 4, of the repositories in Mexico, it was observed that the Universidad Veracruzana, the National Polytechnic Institute and the Autonomous University of Nuevo León top the list and the 13th position is occupied by the Digital Theses Repository of the Mexico's College. Thesis of the UAM Iztapalapa Unit in the 11th place, National Autonomous University of Mexico's RAD[2] occupies the 9th place.

Table 5. Top institutional repositories in Mexico

ranking	World Rank	Instituto	Tamaño	Visibilidad	Ficks Rich	scholar
1	583	Repositorio Institucional de la Universidad Veracruzana	338	534	356	1119
2	619	Repositorio Academico Digital Universidad Autonoma de Nuevo León	471	391	542	295
3	727	Repositorio Institucional Universidad Autonoma del Estado de Mexico	319	1060	541	511

2   RAD UNAM is just a meta-search engine (not a repository as such). The National Autonomous University of Mexico has numerous repositories that are not reflected in the repositories web ranking (July 2016), so the results should be taken with reservation

4	1089	Universidad Autónoma de Querétaro Repositorio Institucional	1191	1418	897	737
5	1126	Tesis Institucionales Instituto Politécnico Nacional	831	1365	666	1151
6	1277	Repositorio Institucional de acceso abierto del Tecnológico de Monterrey	1013	1584	795	1068
7	1325	Repositorio Institucional Universidad Autónoma del Estado de Hidalgo	701	1642	1192	1114
8	1461	Nuevo Repositorio Institucional de la Universidad Autónoma de San Luis Potosí	1429	1758	1449	1121
9	1662	ITESO CONACYT Documentación en Ciencias de la Comunicación	1914	1332	761	1871
10	1690	Repositorio Digital Institucional Instituto Politécnico Nacional	588	844	515	2049
11	1979	RAD Repositorio Institucional Red de Acervos Digitales UNAM	1402	1517	1069	2021
12	2078	Universidad Autónoma Metropolitana unidad Iztapalapa Tesis Electrónicas TESIUAM	2225	1575	387	1984
13	2221	Tesis Digitales El Colegio de México	2232	1915	1481	2045

Source: Repositories Ranking Web, February 2017

Table 5 shows again the table of the ranking of institutional repositories in Mexico, but with data from February 2017, where it can be seen a variability in some positions in regard to July 2016. Table 4 shows it can be appreciate the variations, as well as data that have allowed or in its case have caused them to rise or fall positions.

The institutional repository of the Universidad Veracruzana maintains the first position, having 11 points of increase in its visibility, 7 points in Files Rich, with a decrease of 18 and 4 points in size and *Scholar* respectively.

The Institutional Digital Repository of the National Polytechnic Institute has gone from the second to the tenth place, in size achieved an increase of 103 points, in visibility 25 points and in Scholar 1697 points, but a low of 6 points in *Files Rich*.

The Digital Academic repository of the Autonomous University of Nuevo Leon went from the third to the second site, having 274 and 161 points in size and *Files Rich*, but an increase of 47 and 7 points in visibility and *Scholar* respectively.

The Digital Assets Network (DAN) of the National Autonomous University of Mexico, went from occupying the 9th place to the 11th, achieving an increase of 58, 290, 205 and 33 points in size, visibility, *Files Rich* and *Scholar* respectively.

The Technological and Higher Studies Institute of the West, held position 7 and is now in position 9. The catalog of Documentation in Communication Sciences (Database) managed to increase 265, 9 and 68 points in size, visibility and *Scholar* respectively, but it dropped 69 points in *Files Rich*.

Table 6. Analysis of the ranking of repositories in Mexico from
July 2016 to February 2017

Repository	July 2016 Ranking	February 2017 Ranking	Size	Visibility	*Files Rich*	*Scholar*
Universidad Veracruzana	1	1	-18	+11	+7	-4
National Polytechnic Institute	2	10	+103	+25	-6	+1697
Autonomous University of Nuevo León	3	2	-274	+47	-161	+7
National Autonomous University of Mexico's RAD	9	11	+58	+290	+205	+33
ITESO CONACYT	7	9	+265	+9	-69	+68

Source: Own elaboration based on data from the July 2016 and February 2017 Repositories Ranking Web

These figures show that for international criteria repositories should reduce their size in the number of fragmented files and provide full-text files; increasing their visibility by making use of the new social media platforms is essential and of great impact for the positioning and dissemination of content among students, considering that they are the ones who make use of these communication tools. Increasing the variety of ways in which data and information are presented is fundamental, as long as they are formats that may be visible in new generation equipment such as: Smartphone and Tablet. Finally, the Google metrics and standards that allow the indexing of contents in their databases and allow occupying a better place in organic search results are key factors that allow a greater usability of files in the network, as well as their retrieval, preservation and dissemination.

After looking at the current situation of the repositories worldwide and studying their behavior in particular for Mexico, data obtained from the questionnaire applied to teachers, researchers and professionals who carry out activities related to the dissemination of knowledge were analyzed. Questions and results obtained are presented.

Chart 3. Have you done any type of academic or research publication inside or outside the university, center or institution to which you belong?
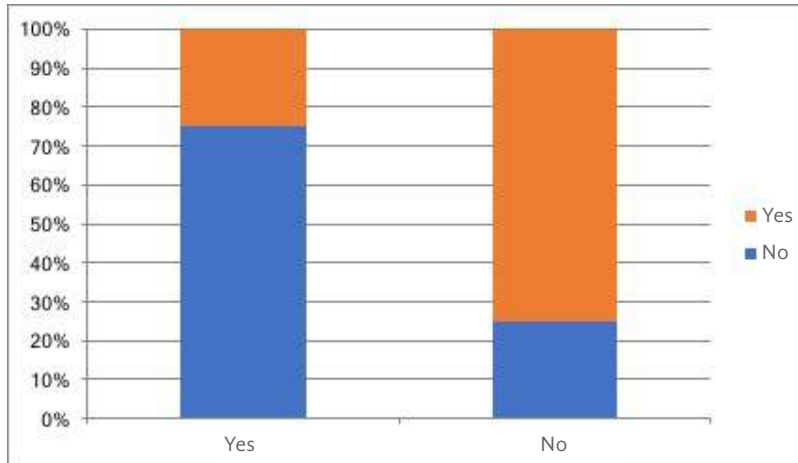
Chart 3 shows that 75% have made some type of publication either in the institution to which they belong or in some other, including public, private, national and foreign universities.

Chart 4. Where have you published?
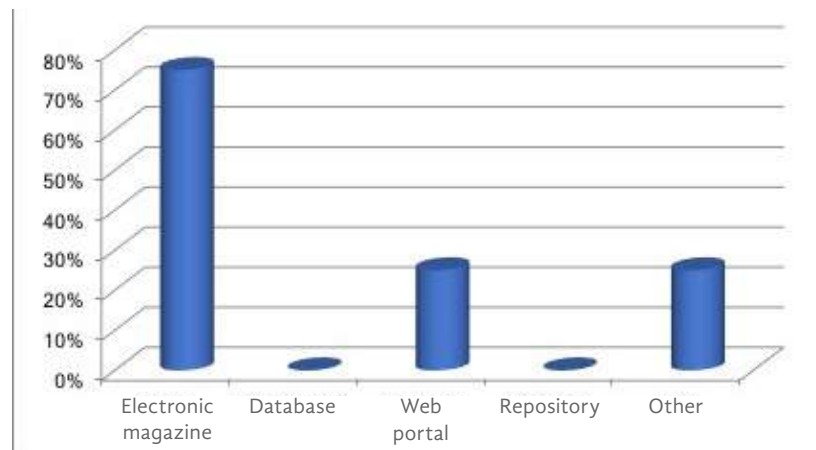
In chart 4 it can be seen that 75% of publications belong to electronic journals, followed by web portals by 25%. It should be mentioned that databases or repositories are not yet a means by which academics or researchers are inclined to use as a means of dissemination to increase the visibility of their materials. But 25% indicated that they have made publications in other media.

Chart 5. What type of academic, research or other material have you published?
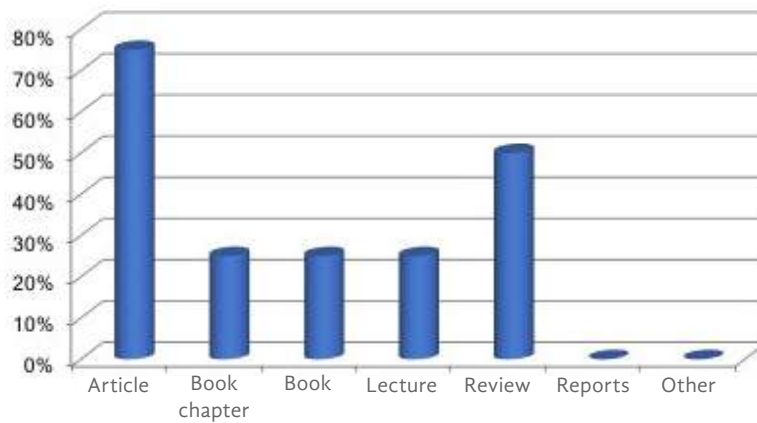
Chart 5 shows the different materials that are published in public, private, national and foreign institutions, of which the articles have been the type of publishable material preferred by authors of academic and scientific content, obtaining 75%, followed by book reviews by 50% and books, books chapter or lecture only 25%. Regarding reports or other materials in the present study, no data were obtained, remaining at 0%.

Chart 6. Do you publish in open acess?
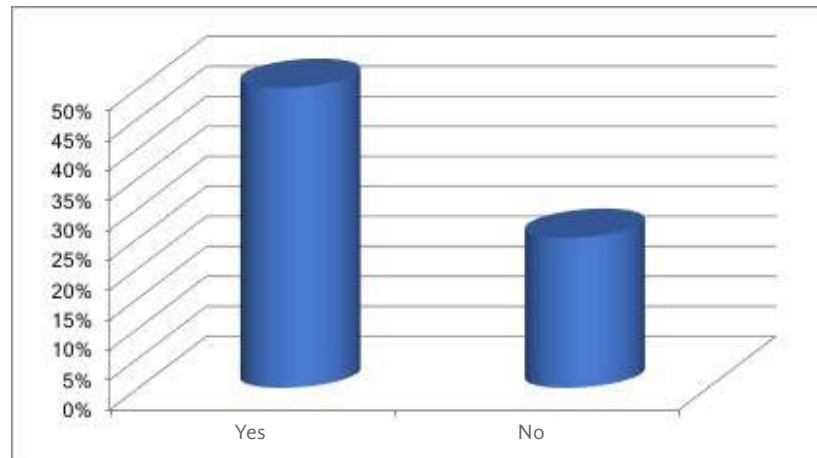
Chart 6 shows that 50% publish in open access and 25% do not, opting for private journals in which they have to pay, both authors and readers, to publish or have access to these materials, in some cases the author obtains royalties for work consulted.

Other data obtained through the questionnaire were:

50% of those who have published are very sure that their information will be available to be consulted all the time, 50% of the consultations on the Internet are made through their smartphone, followed by 25% on a Tablet and 25 on computers desktop. The contents consulted usually appear in 100% in HTML format, 70% in PDF format, 25% in ePub format (electronic book or eBook), in image or video. Finally, 100% consider that a single source of information should provide data in a variety of formats such as: audio, image, video, html or pdf.

CONCLUSIONS

A repository is basically a database that not only provides referential information, but stores digital objects that can be of different nature (text, image, audio or video) and in a wide variety of formats (HTML, PDF, epub, mp3, mp4, etc.). In the repository, each resource or digital object is identified and characterized by a set of standardized metadata; such metadata provide descriptive information (author, title, year) of resource administration (creation of the resource, rights, access control), and preservation (type of format, weight, version.). Such specifications allow the retrieval of each particular resource through the Internet (Bongiovani, 2010, Abadal, 2012, Bustos and Fernández, 2009). The ability to share data and enable exchange between different systems (interoperability), allows to create a database network; such is the objective of Conacyt's call in 2015 on Repositories, which allows institutions that do research to have a repository so they can later become part of the National Repository.

Institutional Repositories are those that belong, store, share and retrieve information from institutes, universities and research centers (Lynch, 2003 cited in Melero 2008). The digital repositories are being used as a good tool for the management and preservation of the resources produced by the academic and research communities of Higher Education Institutions, and they have rapidly permeated this field, displacing to a certain extent the role that digital libraries play in the management of academic and research materials.

The creation of a repository requires the joint effort between groups of different specialties, since it is necessary to organize the contents, operational policies and technologies to be used in multidisciplinary repositories that, as mentioned by Redalyc and UAMex (2013), are generated in particular by universities, institutes and centers.

Desirably it should be an institutional directive that governs the implementation of a project of this nature, especially in large-scale organizations

where the problems are greater and in which standardization activities require the standardization of practices and technologies of heterogeneous groups.

The benefits that entail the implementation of an institutional repository of open access for institutions, researchers, technologists, academics, university students, and society in general are:

1. Provide a self-archiving system to researchers, teachers, university students and the general public for the storage, preservation and dissemination of academic and research content
2. Maximize the visibility of scientific and academic production
3. Develop monitoring systems for the generation of repository usage statistics
4. Increase production and publication inside and outside the university
5. Comply with the new provision of the Science and Technology Law regarding the Repository
6. To have a platform for the common exchange of information produced at the University
7. Facilitate access to repository content from different electronic devices connected to the internet.

The social impact that will have will be decisive for the improvement in its management processes and technological innovation and will allow providing tangible indicators of the academic and scientific production that the university has; as it will also address the new model of public administration (The New Public Management) directing efforts to guarantee effectiveness, efficiency and quality in resources (Aguilar, 2013), free access and transparency in public information (research financed with public resources). The impact factors will be consulted, as well as statistics on use and consultation of materials.

To ensure the permanence and growth of the repository's academic heritage, editorial policies must be established to ensure that academics, researchers, teachers and students can publish and, above all, have guidelines that guarantee the academic quality of the documents stored in the repository.

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CIVIL ASSOCIATIONS THAT CATER TO DRUG USERS IN VILLAHERMOSA, TABASCO

—

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— *Abstract*—

The consumption of toxic substances is a practice that accompanies the human being since it is historical memory. However, since the end of the twentieth century in Mexico, the use of alcohol, marijuana, tobacco, cocaine, heroin, methamphetamine, amphetamines and other drugs, is a problem that has worsened in the society in general. Before the substandard medical services offered by the State, civil partnerships have emerged in the national territory, which by its own initiative have built various spaces of rehabilitation. To fulfill its objective, these social actors have reappropriated, to a greater or lesser extent, the therapeutic method of Alcoholics Anonymous, but the essence of this recovery program is not based on clinical medicine but in the religious field.

Keywords

Therapeutic associations, addiction, therapeutic model, religious field, secondary socialization.

THE SCENARIO OF ADDICTIONS IN MEXICO AND TABASCO

In different periods of time, drug use has been present in the culture of different societies in Mexico, which has been carried out under constant reinterpretation of its uses and purposes, because it has been closely linked to religious, economic, and politics and social life of the peoples that inhabited and inhabit our country.

> *The psilocybin (magical fungus),* **salvia divinorum** *(grass of the shepherdess),* **epithelantha micromeris** *(hikuli mulato or peyote),* **turbina carymbosa** *(ololiuqui),* **calea zacatechichi** *(zacatechichi), are plants that some decades ago were spread in Mexico, they were extracted from ritual practices of different native peoples, and separated from the cultural context in which they were used, they were inserted in other social environments, with other cultural values and, above all, with other intentions (Furst, 1980, cited in Gutiérrez, 2004: 6).*

However, for three decades there has been an exponential increase in the consumption of legal and illegal drugs in Mexico. Proof of this, are the data provided by the Ministry of Health, through the National Survey of Addictions (ENA). These reports detail the increase in alcohol consumption in the decade from 1988 to 1998, where the percentage of male drinkers rose by 4 points, from 73 to 77%, while the percentage in women increased by 10 points, from 55 to 65%. Likewise, it is mentioned that in the country there were 32,315,760 people between 12 and 65 years who ingested intoxicating beverages, 16,366,572 individuals who smoked tobacco and 3.5 million subjects who used drugs, this not including tobacco and alcohol. For that decade, it was estimated that the abuse of tobacco, alcohol and other drugs, by itself, accounted for 10% of the total weight of diseases in Mexico, and that the associated conditions such as lung cancer, liver cirrhosis, psychic disorders, injuries caused by motor vehicles, homicides and suicides represented important causes in terms of loss of years of healthy life (Ministry of Health, 2002).[1]

For its part, the report of the Ministry of Health of 2008 identified that 35.6% of the population between 12 and 65 years smoked tobacco, which

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1 According to information from the World Health Organization (1995a), alcohol abuse ranked fourth in the world among 27 risk factors, below low weight, unsafe sex, hypertension, smoking and other drugs.

was equivalent to about 27 million Mexicans, doubling the number of consumers in a decade. Similarly, it was revealed that in the population between 12 and 65 years of age, the use of natural and synthetic drugs increased one percentage point with that observed in 2002, going from 5 to 6 percent. Regarding the intake of intoxicating beverages, as had been observed in previous studies, the typical use pattern is of large quantities per occasion of consumption. In total, almost 27 million Mexicans (26,828,893) between 12 and 65 years old drank with this pattern and presented consumption frequencies that oscillated between less than once a month and every day. This means that, although they drank infrequently, when they did they ingested large quantities. For that year, almost 4 million (3,986,461) people drank large quantities once a week or more frequently, is what is known as customary users. With respect to "customary consumption, it is more frequent among men than among women, in a proportion of 5.8 men for each woman. Among women, however, this way of drinking is increasing, especially among teenagers. The difference between adult women and adolescents (a woman between 12 and 17 years old, for every 1.9 adult women over 18 years of age) is lower than that observed among men (one adolescent between 12 and 17 years old for every five older adults of 18 years)" (2008a: 62).

The last survey published by the Ministry of Health corresponds to 2011, in this document it is indicated that the national results for the total population of 12 to 65 years, with respect to the three prevalences on the intake of intoxicating beverages, observed a significant increase in each one of them from 2002 to 2011. So, the prevalence ever in life went from 64.9% to 71.3%, the prevalence in the last twelve months rose from 46.3% to 51.4%, and the proportionally greater growth was presented in the prevalence of the last month, since it increased from 19.2% to 31.6%. While analyzing the data by sex, the same trend was observed from 2002 to 2011. Thus the prevalence at some time in their life grew from 78.6% to 80.6% and in them from 53.6% to 62.6%. The last year's prevalence in women went from 34.2% to 40.8%, while in men the increase was registered between 2008 and 2011 (55.9% to 62.7%). Regarding the prevalence of the last month between 2002 and 2011, it increased in men from 33.6% to 44.3% and in women from 7.4% to 19.7%. For its part, the population aged 12 to 65 years that consumed a drug went from 1.6% to 1.8%, an increase that statistically was not significant, since it is very similar to that reported in 2008, marijuana being the most commonly used drug, followed very closely by cocaine. Likewise, in the population aged 12 to 65 years, a prevalence of active tobacco consumption of 21.7% was announced, which corresponds to 17.3 million Mexican smokers. 31.4% of men and 12.6% of women are active smokers (12 million men and 5.2

million women). 8.9% of the population in this age group mentioned being a daily smoker (7.1 million); when disaggregated by sex, 13.2% of men and 4.8% of women smoked daily. 26.4% (21 million) said they were ex-smokers, 20.1% were occasional smokers and 51.9% (41.3 million Mexicans) of the population said they had never smoked tobacco.

Regarding the state of Tabasco, it can be said that, based on the Ministry of Health (2008b) through the National Survey of Addictions (Results by Federal Entity), it is one of the states that lacks serious research on the topic of addictions For this reason, the data issued in this report are reduced to institutions that conducted studies on this topic.[2]

In the case of the intake of intoxicating beverages, the report mentions that the Tabasco entity is within the national average in men with 1.5%, while women are above the average with 0.5%. On the other hand, in the same document it is alluded to that 30.2% of the population between 18 and 65 years old, about 351, 900 people, smoked tobacco sometime in their life. The reasons for the beginning of tobacco consumption were curiosity and coexistence with smokers. 68% of smokers started using tobacco out of curiosity, while 20% did so because their family, friends or colleagues smoked. The age of onset in the consumption of tobacco in men is at 16.4 years and in women at 17.2 years. Regarding the information on the consumption of drugs (without including tobacco or alcohol), it is observed that 14 thousand people in the entity use them. The drugs favored by the Tabasco population are cocaine (61.1%), followed by marijuana (52.2%) and crack (48.3%). As for the initial drugs in them alcohol represented 50.8% and marijuana 19.8%, while in them alcohol was 69.2% and tobacco 19.2%. An important aspect that should be emphasized is that the percentage of people dependent on drug consumption in Tabasco is 1.0%, placing the entity above the national average of 0.6% (Ministry of Health, 2008b).

This statistical information becomes more relevant when we realize that the State institutions in charge of providing health services in Mexico have been inoperative for decades. Proof of this is that despite the fact that alcoholism is considered a dependency syndrome[3] by the World Health Organization

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2   The Epidemiological Surveillance System of Addictions (SISVEA); Youth Integration Centers (YIC); and Child Protection Councils.
3   The dependency syndrome is one of the most serious problems associated with alcohol. It is a picture that includes experiential, behavioral, cognitive and physiological manifestations. For individuals who

(2008),[4] it is not psychiatrically treated by the institutions of the Health Sector, since when an alcoholic person goes to the IMSS or to the ISSSTE to be attended, it is sent by the doctor, in the best of cases, to a group of Alcoholics Anonymous.[5] The same fate befall those people who require treatment for their addiction to tobacco, marijuana, cocaine, crack or other drugs, as they are mostly channeled to Civil Associations, which on their own initiative have created rehabilitation spaces.

> *The Ministry of Health [of the State of Tabasco] has 13 institutions of primary attention in addictions, the so-called Nueva Vida Centers, where they work up to a mild or even moderate dependency, depending on the frequency, consumption and type of drug. The state official admits that for residential treatments there are only those who run Non-Governmental Organizations, where users with severe dependence are admitted (Diario Presente, 2014a).*

To fulfill their objective, these social actors have re-appropriated, to a greater or lesser extent, the therapeutic model of Alcoholics Anonymous. However, as Gutiérrez (2014) proved, the essence of this therapeutic program is not based on clinical medicine but on the religious field.[6] "Such a method is a conversion process[7] by which the Double A's adepts mend their belief and purify their soul. Understanding as purification of soul, the set of beliefs on which a person relies to balance and compensate the mind, body and spirit of themselves and others "(Gutiérrez, 2014: 14).

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suffer from it, life is structured around drinking, and this constitutes its highest priority, above any other interest the subject previously had. The subjects with a dependency syndrome present a wide set of symptoms and signs that are shown to be associated, although not necessarily are all present in all the patients or in the same evolutionary moment. They tend to bring together a large number of problems related to alcohol, both in the individual and family and social sphere. The dependence on alcohol appears associated with high and prolonged consumption of alcoholic beverages and, in turn, forces such consumption to continue. Although not all excessive drinkers develop this dreaded picture, all those who develop it have had high consumption for some time "(Franco and Giner, 2008: 73).

4   "In 1977, a WHO Group of Researchers, in response to the imprecise and variable use of the term alcoholism, proposed to use instead the term alcohol dependence syndrome in psychiatric nosology. By analogy with drug dependence, the term alcohol dependence has been well received in current nosologies"(World Health Organization, 2008: 16-17).

5   Unlawfully there are Double A groups in various clinics or hospitals in the health sector in the country. The "Tlatelolco" group of Alcoholics Anonymous sessions from Monday to Saturday at the ISSSTE Neuropsychiatry Clinic, which is located in extension Guerrero No. 346, Delegation Cuauhtémoc, Mexico City.

6   It should be clarified that the therapeutic method in the context that is worked on takes the form of a commodity, since it acquires a use value and a value of change, thus entering the logic of the religious market (De la Torre and Gutiérrez, 2005).

7   For the eminent American philosopher and psychologist William James (2005 and 2006) to be converted is to be in a process by which religious realities become firmer, more prominent and important for the

For this reason, in the following pages, what we will be dealing with will be to describe and analyze how various Civil Associations that serve drug users in Villahermosa, Tabasco, strengthen their rehabilitation model through the religious therapeutic method of Alcoholics Anonymous.

THE ALCOHOLICS ANONYMOUS' THEO-THERAPEUTIC METHOD

Alcoholics Anonymous is a Civil Association that works as a community through self-help and mutual aid groups. Its origins can be found in psycho-analytic institutions related to the therapeutic capacity of the word, as in ideology and religious practice. Double A was born as a spiritual derivation of the Oxford Groups, a Christian evangelical brotherhood that did not have a structured hierarchy or a list of followers (Brandes, 2004b). "The idea of Alcoholics Anonymous, although not the organization itself, dates back to 1934, when Bill W., a New York broker who was going through hardships was hospitalized for an acute alcoholic episode. An ex-partner of revelry who had stopped drinking approached Bill to help him. He recommended that he go to the Oxford Group, a tolerant evangelical movement "that did not have lists of members, rules or hierarchy and with members who placed their destiny in the hands of God, according to each one conceived a spiritual power" (Trice and Staudenmeier, 1989; cited in Brandes, 2004a: 48).

We know the story of Double A thanks to the manuscripts of Bill W. himself, which begins in the wake of his first meeting with Dr. Bob, in Akron, Ohio, on June 10, 1935. Both were sick alcoholics, but they realized that by sharing their experiences they controlled the urge to drink and decided to share their doctrine with alcoholics in the hospital in that same city (Gutiérrez, 2014).

For the year 1939, the Double A group published its basic text. The book written by Bill W. explains the philosophy of A.A., as well as its therapeutic method. Currently that writing is known as the big book or blue book of Alcoholics Anonymous. In it is stated that to fulfill its rehabilitation the members of A.A. need to accept a program based on Twelve Steps and Twelve Traditions. Years later (in 1951) Bill W. himself drafted the Twelve Concepts to establish the procedure of service in the group. Within the A.A. community The Twelve Steps, the Twelve Traditions and the Twelve Concepts are known as the Three Legacies (Gutiérrez, 2014).

Based on the precepts of Alcoholics Anonymous, these Three Legacies "are at the heart of the A.A. recovery program, and many of the members refer to them as: the steps we took that led us to a new life" (Alcoholics Anonymous, 2011).

It is important to specify that what the members of Double A call "a new life", in the academic field is known as secondary socialization or re-socialization, that is, a form of conversion, as Garma (2000) points out recreates new values and belief systems.[8] This can be seen because the figure of the convert imposes itself in a subtle way on people who voluntarily pass from one religion to another. To the extent that, conversions in contemporary societies are inseparable from the individualization of religious adherence and the process of differentiation of organizations that give rise to religious identities other than ethnic, national or social entities. In a society in which religion is a private matter and optional matter, conversion takes on the dimension of an individual choice, in which the autonomy of the believing subject is expressed at its highest point (Hervieu-Léger, 2004).

> *A "social system" is not only composed of the economic structure and the other determining or autonomous areas, but its agents and first and final recipients, are the individuals who participate in it and who must make "system with the system". This can only be carried out through psychosocial capacities and mechanisms that are active and receptive to the socializing process (Kaminsky, 2001: 11).*

This figure of the modern individual is conjugated in three modalities. The first is that of the individual who changes his religion, whether he explicitly rejects a religious identity inherited and assumed to take a new one; whether he renounces to an imposed religious identity, but to which he had never adhered, in favor of a new faith. The second modality of conversion is that of the subject who, having never belonged to any religious tradition discovers, after a personal journey more or less long, that in which he recognizes himself and finally decides to incorporate himself. And the third modality of the convert is that of the re-affiliate, of the converted from the inside:

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individual. The character of the person is transformed, especially after a sudden crisis. The religious ideas, formerly peripheral in your mind, will become central to your consciousness. Emotional events set the stage for the conversion process, leading the individual to a crisis situation that later surpasses his contact with the sacred. Also, James considers that there are people prone to conversion, while others will hardly. It also clarifies that some religious groups encourage the process of conversion more than others and denotes how Christian Protestant groups demanded that their parishioners have experiences of this kind to ensure their salvation.

8   We understand secondary socialization or re-socialization "each and every one of the instances through which a human subject is integrated and incorporates the slogans and determinations of the social structure in which it interacts. More precisely: socialization includes all instances through which a human subject becomes an individual. Being an individual implies "individualizing" in a person those general characteristics that connote a social structure"(Kaminsky, 2001: 11).

the one who discovers or rediscovers a religious identity that until then had remained formal in a purely conformist way (Hervieu-Léger, 2004).

These conversion modalities allow us to affirm that this does not consist only in the invigoration or drastic increase of a religious identity, but in the contemporary subject's specific form of construction of the religious identity.

CIVIL ASSOCIATIONS IN VILLAHERMOSA, TABASCO

The increase in drug consumption in Mexico is due in large part to diverse and complex reasons that intervene between the dimension in the incidence in the use of toxic substances -and their negative consequences- and the State's lack of attention through its health dependencies, to face this social phenomenon. Based on the report of the Inter-American Drug Abuse Control Commission (2015), medical care is aimed at intervening in injuries, illnesses and damages of various kinds caused by drug use, but it exhibits serious problems and deficiencies in regarding prevention, diagnosis and care.

In order to face this panorama, society in Mexico has elaborated and reproduced different material and symbolic resources -according to the cultural context of each region of the country- that to a certain extent have been "successful". Among the practices most used by those who use drugs are the oaths to various deities -San Judas Thaddeus, the Holy Death, the Child Fidencio, Jesus Malverde, Juan Soldado, the Virgin of Guadalupe, the Lord of Chalma, the Black Christ of Esquipulas, San Pascualito, etc.-, adherence to Protestant denominations, biblical or new religious movements of the new era, as well as the incursion into Civil Associations that have self-help groups and mutual help.[9]

As for the latter, in the specific case of Tabasco, particularly in Villahermosa, the Civil Associations that are legally constituted and that serve drug users are only Youth Integration Centers and Anonymous Drug Addicts.

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9   The Civil Associations constitute, since the 1950s, a phenomenon of growing importance, especially in Western societies. There are organizations of these groups that deal with a huge variety of problems or human situations: there are groups for those who drink, smoke or use other drugs, play or practice compulsive sex; for those who eat too much or do not eat, for those who suffer from diabetes, bulimia, neurosis, schizophrenia or AIDS, among many others. Likewise, mutual help groups have been made for the relatives and friends of these people (Rosovsky, 2009).

YOUTH INTEGRATION CENTERS C. A.

Youth Integration Centers (YIC) is a Civil Association that was founded in Mexico City in 1969. Since 1982, this body was incorporated into the Ministry of Health, which is subject to the regulations issued by the Federal Government to parastatal entities, that is, cooperates with the State, but is not part of the public administration. It should be noted that since 1973, the legal management, administration and representation are in charge by the National Office, executive body of the General Assembly of Associates, which is made up of active and honorary members. The activities of the YIC "are aimed at prevention, treatment, rehabilitation and scientific research on drug use in Mexico" (Youth Integration Centers, 2016).

The Civil Association is spread throughout the national territory with 102 Prevention and Treatment Centers, 12 Hospitalization Units and 2 Treatment Units for people with heroin consumption problems. Unlike other entities in the country, in Tabasco there is only one Prevention and Treatment Center, which is located in Villahermosa, which opened its doors in June 2003.

A particularity of this institution is that it is based in a popular colony, where people of limited economic resources can be observed in broad daylight consuming drugs. The YIC Villahermosa property consists of management, psychology offices, medical office, social work cubicles, multipurpose room, library, bathrooms, waiting room, warehouse and parking.

According to the 2015 report, the number of users served by drug use in YIC Villahermosa was 125 people, 100 men and 25 women. The age of entry to treatment of 89% of people ranged between 10 and 29 years, although from 15 to 19 years old, 60% of the patients were concentrated, with a total of 62 men and 13 women. 30% of the people treated have basic education studies, 57% average higher and 11% higher education. The report also says that between 10 and 19 years old 75% of patients began to drink intoxicating drinks and smoking tobacco, in the same age range, 89% started using marijuana, 33% cocaine and 15 % crack (Gutiérrez, 2016a and 2016b).

On a daily basis for the rehabilitation of drug users YIC Villahermosa uses Behavioral Cognitive Therapy (BCT), which "can be defined as the clinical application of the science of psychology that is based on empirically validated principles and procedures" (Plaud, 2001 cited in Ruiz *et al*., 2012: 32). The contemporary differences between the different approaches considered cognitive behavioral are of an epistemological nature when accepting substantially different conceptions of reality and psychopathology.

These theoretical and epistemological differences are reflected in the forms of intervention, from the most rigorously behavioral to the strictly cognitive constructivists.

From a phenomenological point of view we can identify four characteristics of Behavioral Cognitive Therapy. 1) BCT is an area of intervention in health that works with physical, emotional, cognitive and behavioral maladaptive responses of a learned nature. The individual has responsibility for the processes that affect him and can exercise control over them. 2) BCT is characterized as a limited time therapy compared to other long-term psychotherapies. 3) The BCT has an educational nature that can be more or less explicit. 4) BCT essentially has a self-evaluating character throughout the process (emphasis on empirical validation) (Ruiz *et al.*, 2012).[10]

However, parallel to Behavioral Cognitive Therapy, which we will call the Lay Rehabilitation Model (LRM), YIC Villahermosa uses the therapeutic program of Alcoholics Anonymous, which we will call the Religious Model of Rehabilitation (RMR).[11] In this regard, the psychologist Olga Aguirre, director of YIC Villahermosa, tells us the following:

> *We handle three types of treatment. One of them is ETA (Early Intervention in Adolescents). Now we have the program of early intervention in adolescents with marijuana consumption, because they are the ones that come most for rehabilitation. On the other hand, we have the Day Center treatment, they are there all week, about four hours a day, and we value them with group and individual therapies for parents and children. The other treatment is the External Consultation, and they come two or three times a week to be valued. We handle the Behavioral Cognitive Model; it is the one that has given us the best results. It is even the model that was taught to Oceánica [Rehabilitation and treatment of addictions clinic], that Oceánica taught to the CAPAS [Primary Care Centers of Addictions]. The model consists of a motivational interview, because when the kids arrive, they are very out of touch and you have to orient them. They are then placed in an Outpatient*

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10 The behavioral theoretical foundations that served as the basis for the development of Behavioral Cognitive Therapy were: Pavlov's reflexology and classical conditioning laws, Thorndike's connectionism, Watson, Hull, Guthrie, Mowner and Tolman behaviorism, and the contribution of Skinner to the experimental analysis of behavior (Ruiz *et al.*, 2012).

11 Castrillón (2008) identifies two models of treatment that are in constant play in the community/addict therapeutic relation in recovery: one of a lay nature, specifically scientific, and the other of a religious nature, particularly Christian.

Consultation or Day Center. Any of the programs is intensive with duration of 3 months. We also have a workshop called New RED. In this workshop, one of the patients who is in the follow-up phase arrives, and he or she gives them a talk about their experiences, how they benefited from quitting drugs, the challenges they had to go through, etc., similar to Alcoholics Anonymous. Here we have Alcoholics Anonymous as a support group, they hold sessions on Monday and Wednesday, and on Fridays Al-Anon, for parents and relatives of patients (Aguirre, 2016).

It is well known that the YIC treatment program in Mexico is made up of three subprograms: outpatient, hospitalization and harm reduction. During the fieldwork in YIC Villahermosa, it was found that in this unit only the external consultation subprogram is applied, which is divided into three programs. 1) *First Response Plan* (Early Intervention in Adolescents). It is a primary response plan aimed at people who have had little contact with drugs, especially for recreational or experimental purposes, to intervene in those first moments and help them not to develop an addictive process. 2) *Basic External Consultation*. It consists of several health services, provided by doctors, psychologists and social workers, who seek as the first and last objective to achieve abstinence from drug use. 3) *Intensive External Consultation*. It is applied under the modality of Day Centers, which is based on the model of Therapeutic Communities (TC), is aimed at people with abuse problems and/or dependence on alcohol, tobacco and other drugs, which require comprehensive and intensive care due to the severity of their addiction. The care includes the preparation of a personalized treatment plan with therapeutic and support activities, monitoring of their health status and rehabilitation services. Psycho-educational and counseling services are also provided for family members of patients. The treatment is ambulatory. Patients attend from Monday to Friday and have activities for four or five hours in the afternoon. The duration of treatment can vary from one to three months, depending on the particular case of each patient and its evolution. It should be noted that each of these programs walks its own path. The core of the situation is that they are not complementary or reciprocal, although they pursue the same objective.

An example of this is that the individual therapies practiced in the treatment programs at YIC Villahermosa are part of "an experiential process in which a person, in the position of patient, establishes a relationship of help with an expert, in position of psychotherapist, with the purpose of overcoming situations that are reported as sources of discomfort and suffering, with the

aspiration of reducing these disintegrative subjective effects and reaching a state of greater well-being alluded to as a cure" (Murcia and Orejuela, 2014: 156).[12]

While the Alcoholics Anonymous' presence -and of Al-Anon- does not correspond solely to a support group as mentioned by the director of the institution, because in reality they are the basis of group therapies for patients, family and friends, since the sessions that take place in the Day Center are celebrated in the same way -in terms of structure, procedure and content- as those practiced in any traditional group of Alcoholics Anonymous in Mexico.[13] These meetings are chaired by active members of Double A -and Al-Anon- in Villahermosa, Tabasco.

That sense, we can affirm that YIC Villahermosa has only two forms of attention, individual therapies (of a scientific nature), which are administered by professional therapists who work in the institution, and group therapies (of a religious nature), which are directed by adepts of Double A -and Al-Anon-, people who are not professional therapists.

This concern, on the one hand, that YIC Villahermosa has placed greater emphasis on Day Center, so that this program works as well as possible causing the other two treatment programs to be neglected. It is likely that this is a result of the internal policy of the YIC in Mexico. On the other hand, YIC Villahermosa's management is more concerned with the administrative part than with the treatment and effectiveness of the rehabilitation program. Such a situation makes the performance of the Civil Association in the Tabasco entity more complex.

DRUG ADDICTS ANONYMOUS C. A.

Drug Addicts Anonymous, is a Civil Association that was founded in Mexico City in 1983. Its origins can be found in the groups of 24 Hours of Alcoholics

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12   It is important to clarify that there are different forms of psychotherapies, according to the theoretical approach that sustains them, in this sense; we cannot talk about psychotherapy but psychotherapy.

13   The most common meetings are: 1) Closed. For alcoholics only. 2) Open. For anyone interested in attending. 3) Marathons. For alcoholics only and are performed in a certain group without time limit. 4) Public information. Meetings that take place inside or outside the group with specific speakers, in which the importance of informing the public about what Alcoholics Anonymous does and does not do is given. 5) Compartments. Meetings in which a specific topic is discussed to train members. 6) For beginners. Sessions that are held only when a new member arrives in the group. 7) Of service or work. One or several times a month special meetings are held, different from the others, in which the group's servers inform about the development of their work and receive guidance from the members of the group. In these meetings, the servers of the Group, District, Area, etc. are chosen (Gutiérrez, 2014).

Anonymous, which were based on the philosophical precepts of Double A. The primary objective of this body is "to rehabilitate people with drug addiction problems, covering their physical, mental and spiritual aspect, contributing to their social reintegration in a dignified and efficient manner, based on the program of the Twelve Steps" (Drug Addicts Anonymous, 2016).

Today, Drug Addicts has 30 Treatment Centers that are located in Mexico City, Coahuila, State of Mexico, Guanajuato, Guerrero, Jalisco, Michoacán, Morelos, Nuevo Leon, Oaxaca, Puebla, Sinaloa, Tabasco, Tamaulipas, Yucatán and Veracruz. They also have presence in New York and Florida, in the United States. Unlike other entities, in Tabasco there is only the "Manantial de Vida" Treatment Center, which is located in Villahermosa, which was inaugurated in November 1987.

Among the peculiarities of Drug Addicts Anonymous in Villahermosa, is that only men between 18 and 59 years of age are admitted, who must remain inmates for at least three months for their rehabilitation. For this, the person requires to arrive at the association by own will and accompanied by a relative. During the stay the subject receives food three times a day. Both housing and food "have no" cost, although in reality, according to economic status, is the donation given by the relatives of the addicted person. Currently the property of "Manantial de Vida" consists of coordination, reception, dormitories with capacity for eighty people, bakery workshop, group meeting room, multipurpose room, kitchen, patio, bathrooms, laundry area, cellar and stay.

According to José Salvador Casanova, person in charge of "*Manantial de Vida*", the treatment consists of the following:

In this hostel we work with a mutual help model, which includes three types of therapies that we offer to users: the group, the individual, occupational and sports. Group therapy are meetings that take place among the young people who are interned, where they express their experiences, their achievements and desire to overcome through a catharsis of emotions. We do this activity five times a day, during the three months that they will be internal. Individual therapy, we call sponsorship. Where an inmate chooses a person with more experience and tells them his problems, they become his confidant. In occupational and sports therapy, young people regularly carry out murals, practice sports or board games, watch movies, interact and live together. Also as occupational therapy we have a bakery workshop, where they are taught pastry and to make various types of bread. This is for them to keep their mind occupied and discover the

capabilities they have as human beings. The bakery workshop is also a working tool when they intend to reintegrate into society. In the same way, they participate in the kitchen, once or twice a week it is up to each one to make food for all. In sports therapy we go out twice a week to play volleyball and soccer. In those three months that they will be here, they have three visits [one per month]. We call relatives to come see them and live with them for a while, because it is part of the rehabilitation of young people. As now, coming on September 15, we make a living together with the boys and their families (Casanova, 2016).

From the field work we distinguish that the group therapies practiced in Drug Addicts Anonymous are the same in structure and procedure as the closed meetings of Alcoholics Anonymous. These types of sessions are exclusive for members; in this case the inmates in "*Manantial de Vida*". In general, these meetings are discussions dedicated to personal problems of the followers, the indoctrination of the Twelve Steps, as well as issues of the Gazette "The Message", literature printed by themselves, which is about testimonies of men and women who have been "rehabilitated" in Drug Addicts Anonymous. Such meetings last for an average hour and a half. On the other hand, individual therapies work in the same way as when Double A members choose a sponsor, a person who guides the new member through "the best path" in their rehabilitation. "Some say that the best way to be a sponsor is to be a friend" (Alcoholics Anonymous, 2006a: 17).

Regarding sponsorship, an inmate of Drug Addicts mentions the following:

When I read the subject [in the Gazette "The Message"] "Sponsor's function" I really liked it, I share with you a [religious] experience that helped me value my group more and of course my sponsor and sponsorship, fundamental to save me. A few weeks ago I went to the service to transmit the message in a parish in the city of Córdoba, Veracruz. At the end of the celebration, at the door of the temple, a man approached me who told me that he is a member of a Neurotics Anonymous' group and that he has a hard time carrying communication because sponsorship in his group is very scarce, since those who are sponsors are far away or in another neighboring city, so you must wait for someone or call them on the phone, he said: "I feel desperate, what do I do? I cannot take it anymore" -His words moved me a lot, I did not know what to say to him, I advised him to will talk to whomever and in any way he could. Back to the group I was thoughtful, self-absorbed I only managed to thank God because unlike the desperate men of Neurotic Anonymous who did not have a sponsor to listen to him,

I do have a sponsor and a platform to vent, and because of it I quit drugs and still doubt that God loves you? (Rooms, 2016: 1-2).

It should be noted that, of the Twelve Steps that are employed in Drug Addicts as a therapeutic method, the Fourth and Fifth are the core elements of the rehabilitation program. In those Steps, the sponsor is not only that person to whom the adept has more confidence, but that in whom he deposits his faith, because in itself, the ritual act of the Fourth and Fifth Step performed by the inmates in "*Manantial de Vida*" it is a confession like that made by a believer of Catholic doctrine to redeem his sins, the sponsor being the one who leads and presents the priest to his godson so that he may be baptized. Baptism as such represents the purification of the soul of the subject, that is, symbolically the person is reborn. This type of distinction is what leads individuals to accept the recovery program as part of the conversion process, as people are restructured symbolically through acts of faith.

The last therapy in "*Manantial de Vida*" is that the addict is integrated into an occupational and sports activity, which facilitates the inmate not only to obtain benefits in their health, but also for the subject to develop values, attitudes, skills and knowledge to help them reintegrate society in a better way. This type of actions are enriched with "activities related to the use of free time (making handicrafts, organizing dances, short plays, board games), in order to promote the sociability of individuals, whose general characteristics are of isolation" (Drug Addicts Anonymous, 2016).

Basically the occupational and sports therapy in Drug Addicts, works in the same way and is the equivalent of the so-called "Service", known as the Third Legacy in Alcoholics Anonymous, with the difference that in Double A no sport is practiced.[14] This Third Legacy has the purpose of reinforcing the abstinence of the person serving others, be it coffee grower, sweeper, secretary, treasurer, coordinator, representative of general services, representative of the Plenitud magazine, and so on. Making an analysis, it is a Greek notion of service according to Foucault (2002) in the sense that while I serve and care for others, I serve and take care of myself.

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14   The prayer of Service is used by "Manantial de Vida" in their group therapies: "My God, grant me the serenity, the courage and the wisdom so that this service meeting of AA, is totally safe especially from ourselves" (Alcoholics Anonymous, 2006b: 15).

FINAL THOUGHTS

Although, in the last four or five year period, the consumption of drugs in Mexico has increased, and particularly in Tabasco, the adolescent population -as shown by the statistics presented- is the one that suffers most from this disorder, which directly affects in society as a public health problem that must be addressed immediately.

> *Although there is a high growth of addictions, whose consumption rate registers an alarming increase among the adolescent population, in Tabasco there is no official institution purposely internment for rehabilitation. Until now there is greater attention in prevention programs, authorities of the state health sector acknowledge (Barboza, 2014).*

In order to face this social context, various health institutions and Civil Associations, both national and international, have concentrated their efforts on eradicating or significantly reducing this social phenomenon that is increasingly affecting the population as a whole. However, these efforts have been unsuccessful, since as mentioned by Murcia and Orejuela "for several decades the effectiveness of psychotherapies has been questioned" (2014: 157), because to this day there is no therapeutic program in the world that is effective for the treatment of drug users, including alcohol and tobacco.

> *Santibáñez et al. (2009) present a quantitative research, with a single group design and evaluation of 23 patients who attend psychotherapy, at the beginning and end of it, through which the therapeutic alliance and the effectiveness of the therapy directed by senior students of psychology at the Universidad de la Frontera in Chile. It is concluded that the therapeutic alliance given between therapist and patient, favors especially the decrease of the symptomatology of the patients. Regarding the effectiveness of the therapy, the authors state that in the last 40 years different treatment modalities have been generated and a proliferation of different theoretical approaches, but all with little or doubtful therapeutic effectiveness (Murcia and Orejuela, 2014: 157).*

An example of this is that it is the Civil Associations, under the Therapeutic Community approach, that have obtained the best results from their rehabilitation programs based on spiritual aspects -considered personally as religious-, which do not have the proper structure or the theoretical-practical support of clinical specialists (psychologists, psychiatrists, doctors, social workers, etc.).[15]

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15   It is not necessary that we enter here in a discussion about semantic complexities regarding the daily

The psychologist [Olga Aguirre, director of the ʏɪᴄ Villahermosa] points out that without professional help it is difficult to attack addiction, without going to the root of the problem, both personal and family, as there is codependence. Points out that in the cases of the so-called Annexes, they only stop consuming the substance during the time they are locked up. "They do not address the issue of anxiety either with therapy or drugs, or the physical aspects of taking the drug." A person who graduates from those types of establishments operated by non-professional people "comes out anxious, with nerve and perhaps goes out to consume everything that did not consume" (Diario Presente, 2014b).

An important point to reflect precisely on the rehabilitation model implemented in the Civil Associations in Villahermosa, where we carry out the field work, is that both use, to a greater or lesser extent, the religious therapeutic program of Alcoholics Anonymous for the treatment of users of drugs in Tabasco.

In essence, both the YIC Villahermosa rehabilitation method and that of Drug Addicts Anonymous are tripartite models, since their treatment is divided into three parts: the physical (body), the mental (psychological) and the spiritual (religious). (See Image 1)

Image 1. Tripartite Therapeutic Model

Source: Made by the authors, 2016.

or sociological use of the spiritual or religious terms. For our purpose, it is enough to understand the spiritual as the set of "searches, practices and experiences that can be purifications, asceticism, renunciations, conversions of the gaze, modifications of existence, etc., that constitute, not for knowledge, but for the subject, for the subject's own being, the price to pay to have access to the truth "(Foucault, 2002: 33). On the other hand, religious will be understood as "any form of belief that is fully justified through the inscription claimed by a believing lineage" (Hervieu-Léger, 2005: 137).

It should be noted that this tripartite method of rehabilitation implemented by these Civil Associations is very similar in operation and structure to Alcoholics Anonymous, since it also includes three parts, such as the Three Legacies that their followers have to accept as part of their therapeutic process. In fact, in a symbolic way, these are represented in the logo of the group. The Twelve Steps (recovery), the Twelve Traditions (unity) and the Twelve Concepts (service) are a guide for recovering spiritual values. (See Image 2).

Image 2. Alcoholics Anonymous' Therapeutic model
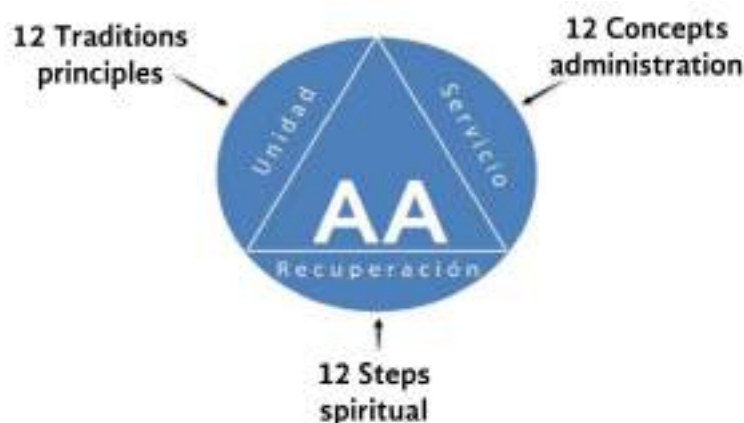
Source: Made by the authors, 2016.

Therefore, the Civil Associations that serve drug users in Villahermosa act as Therapeutic Communities, differing in that the YIC Villahermosa rehabilitation model considers the clinical part to a greater extent, without neglecting the spiritual or religious part, which he places in the hands of the adherents of Alcoholics Anonymous and Al-Anon. While the model of Addicts Anonymous bases the detoxification of the addict on the disposition of the faith in a Higher Power or a God, as each inmate conceives it. This idea is grounded in indoctrination with Christian religious principles, which are taken from the Holy Bible.

Given the conformation of these therapeutic models, it is unquestionable that these Civil Associations are not a solution to the problem of drug use in Mexico.[16]

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16   "It is necessary to point out aspects that contradict the tendency to identify Civil Society Organizations only as honest, fair and transparent entities. On the one hand, we can point out that there are racist, anti-democratic or fundamentalist organizations, as well as others that attempt against the rights of social

First they lack facilities and qualified personnel. Secondly, the methods of rehabilitation, as has been explained, have innumerable deficiencies. Proof of this is that a subject addicted to a drug acquires an emotional codependence to the group that attends as part of its rehabilitation, that is, from one dependency to another. Third, what matters least to the government authorities is whether people rehabilitate themselves -thereby disregarding all responsibility-, since such entities were legally created to do so.

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and political groups, which results in negative social capital. The weaknesses faced by these organizations for their operation also condition them to achieve goals of efficiency, long-term continuity, transparency, among others. Among these weaknesses are: the uncertainty about the financing capacity that conditions the survival of the organization and the realization of many projects, with a more far-reaching vision; the protagonism granted on many occasions to the founding leaders, who are granted attributes that undermine democracy within the same organizations; the little or no investment in professionalization of its members; the incorporation of accountability processes, among many others "(Girardo and Mochi, 2012: 337).

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STYLES OF LEARNING AND ACADEMIC PERFORMANCE OF UNIVERSITY STUDENTS. THE CASE OF STUDENTS CHEMISTRY OF THE UNACH

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— *Abstract*—

This ongoing investigation intends to explore the different learning styles of first to fourth semester students from the Autonomous University of Chiapas and the possible connection with their performance. The learning styles were constituted in an extensive field of study of psychology applied to education which has allowed to have a variety of material to support the different learning styles (attitude, motivation, cognitive, among others). That we find during the learning process and are related to the students final results, their classroom performance and their disposition towards learning. The Honey questionnaire CHAEA was administered to 126 students finding a high level of preference for the, theoretical and pragmatic style, and low preference for the reflexive and active style. The analysis between the academic performance and age and gender of the students it was not statistically significant, but it was significant with respect to the semester studied, it was observed statistical difference between this two variables. A positive significant correlation was found between the academic performance and gender in subjects of third and fourth semester.

Keywords

Sty1es of Learning, Performance, CHAEA.

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The belief that the basic purpose of the educational process is to teach students through active and participatory teaching models, has been extended, in the educational field, since the last quarter of the twentieth century, focused on teaching-learning processes and in the individual differences. In reality, learning would become, from this paradigm, a process of processes (Secadas, 1995), whose identification and diagnosis will allow implementing educational intervention programs aimed at increasing the quality of learning from a global perspective. (Adam, M. I., 2004).

In this interest in how students learn, by their individual characteristics, in order to favor and improve their learning processes, there is concern about the way in which subjects process information through the different perceptual channels, where they face, solve problems or act. This is called "Styles", which is our own cognitive, affective and behavioral identity, fruit of the socio-cognitive interaction that makes each person unique and unrepeatable over the "aptitudes" common to the human race and that are one of the pillars of the individualized attention of the students that fill our classrooms. (Adam, M. I., 2004).

The theory of learning styles must be incorporated into the daily work of all teachers, so the pretensions of education and educational models are going to be achieved effectively. (García and Galán, 2009).

The general notion of Style appears for the first time in psychology in Lewin's 1935 work (cited by Ferrari and Stemberg, 1998 in Hederich, C., 2004), who related this concept to the personality and defined it as a disposition to use of certain cognitive abilities. Later Allport (1937), cited in Hederich, C. 2004, links elements of personality with intellectual styles, referring to lifestyles, which identify some distinctive types of behavior. According to the same author, the general notion of style implies some general characteristics: it is essentially different, insofar as it establishes distinctive characteristics among people, it is relatively stable in each individual; it is integrative in that it relates different dimensions of the subject and neutral in relation to what cannot be assessed in absolute terms or superimposed, one style over another.

The analysis of learning styles offers indicators that help to interpret the person's interactions with reality. The concept that different authors have about learning styles is not common to all and is defined in various ways.

In this same sense, the concept of learning styles (or cognitive styles for many authors) has its etymological background, also, in the field of

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psychology. As a concept, it began to be used in the 1950s by cognitive psychologists as an expression of the particular forms of individuals to perceive and process information.

ISeveral authors define learning styles: (Claxton, CS, and Ralston Y. 1978; Riechmann, SW 1979; Schmeck, R. 1982; Butler, A. 1982; Kolb, D. 1984; Guild and Garger 1985; Smith, RM 1988, Keefe 1988, Dunn, R., Dunn, K. and Price, G. 1990), but Honey, P. and Mumford, A. (1992) define that a learning style is a description of attitudes and behaviors that determine the preferred way the individual learns. Sternberg, R. (1997) states that styles deal with the way in which people prefer to focus on tasks. We can see that there are different ways of understanding the learning style concept. Therefore, one option is to approach the problem from the different typologies that have been proposed, the sum of which is a conglomerate of prisms from which to address the issue (Cited by Albert and León, 2005).

On the other hand, at the University of Camagüey, Cuba, it is considered that learning styles are the set of psychological characteristics, cognitive, affective and physiological features that are usually expressed together when a person must face a learning situation. Cognitive features have to do with how students structure content, form and use concepts, interpret information, solve problems, select means of representation (visual, auditory, kinesthetic), etc. Affective traits are linked to motivations and expectations that influence learning, while physiological traits are related to the student's biotype and biorhythm (El diagnóstico y de, n.d.).

Just like learning styles, academic performance has been defined by several authors such as Chadwick (1979), who defines academic performance as the student's expression of abilities and psychological characteristics developed and updated through the teaching-learning process that makes it possible to obtain a level of performance and academic achievements over a period or semester, which is synthesized in a final qualifier (quantitative in most cases) evaluator of the level reached. Tonconi (2010), who defines the academic performance as the level of knowledge showed in an area or subject, evidenced through quantitative indicators, usually expressed by means of a weighted qualification in the vigesimal system and, under the assumption that is a qualified social group that sets the approval ranges, for certain areas of knowledge, for specific contents or for subjects. And Retana (2011) defines that Academic Performance is the level of knowledge expressed in a numerical grade obtained by a student as a result of an evaluation that measures the product of the teaching-learning process in which it participates.

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A significant number of the studies cited, and many others, used the CHAEA as an instrument to identify and describe the predominant learning styles in the population study. The CHAEA questionnaire is based on D. Kolb (1984), P. Honey, and A. Mumford's (1986) models, who conceive the learning process from experience, Kolb's taxonomy proposes four dimensions of the learning process: 1. Concrete Experience. 2. Reflective Observation. 3. Abstract Conceptualization and 4. Active Experimentation.

Mumford, on the other hand, points out four stages of the process: 1. Having an Experience. 2. Review the Experience. 3. Draw Conclusions from the Experience and 4. Plan the next steps.

In response to the above approaches, Alonso, C, Gallego, D. and Honey, P (1999) affirm that people tend to concentrate more in some stages than in others, generating preferences called Learning Styles, as follows:

1. Live from experience: Active Style
2. Reflection: Reflective Style
3. Generalization, elaboration of hypothesis: Theoretical Style
4. Application: Pragmatic Style

According to Alonso C, Domingo J, Honey P (1994) the Learning Styles can be described as follows:

Active Learning Styles.- The active learning style is the diligent or agile style, where the dynamism and the full participation of students who are group and open-minded people reign. This learning style stands out for being: animator, improviser, discoverer, risk-taker and spontaneous. It is characterized by the pleasure of being locked into an experience, of prolonging the activity and the preference for the invention of ideas.

Reflective Learning Styles.- Reasoning style where predominates the observation and analysis of the experiences' results. It stands out for being: weighted, conscientious, receptive, analytical and exhaustive; it is characterized by the desire to make decisions without contradictions of time. Because of setback and distance importance movement they take into consideration people and things. It is marked by prudence and in-depth reflection before making a decision to act, listen to the exhaustive accumulation of data before giving an opinion.

Theoretical Learning Styles.- It is the style of speculation, where the observation in the field of theory predominates and little in the field of practice. This is

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typical of people who integrate the perceptions of reality into logical and complex theories, focusing on problems with logical structures. They tend to be perfectionist and flee from the subjective and the ambiguous. The Theoretical Style stands out for being: methodical, logical, objective, critical and structured. It is characterized by the investigation of logic and coherence in the organization of accumulated information, for the preference of analysis and synthesis, an interest for basic predictions and the underlying principles, an appreciation of the rational and of objectivity.

Pragmatic Learning Styles.- It is the style of order, where practice, application of judgments or intuition and little theory reign the most. This style stands out for being experimenter, practical, direct, effective and realistic. It is characterized by an interest for the implementation of ideas, theories, and techniques for the purpose of validating the operation. Stands out also for the preference of solving problems to find concrete and practical benefits. Also, a marked preference for realistic and practical solutions is observed.

In this field of learning styles and academic performance, studies have been conducted that have served as a reference in the importance of distinguishing these variables and their relationship between them. In a study titled Student Learning Styles of the University of Sonora, Mexico case study, they conclude that:

> *The different Learning Styles are a tool that can be used to generate methodologies that achieve significant learning, being also of the teacher's interest, since it allows planning and applying teaching strategies focused on the student obtaining better results, which is fundamental in all disciplines. Miranda and Beltrones (2010)*

In addition, learning styles turn out to be rich in explanations to support teachers' classes because they can better adapt their teaching style to the learning style of their students.

In a study on learning styles and academic average in students of Bacteriology and Clinical Laboratory (Molinares, 2014), the author concludes that academic performance is one of the most important components in the teaching and learning process and is closely related to the evaluation and it is in it and in the institutional university policies where there is a failure to interpret and assess the real development of a student's competences.

The author of this work considers that the student requires scenarios, teaching strategies that allow him to potentiate his different learning styles, which

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would guarantee learning how to learn and to perform properly in the face of any problematic situation and learning environments. In reviewing studies of Piaget, other cognitive theorists and the theory of information development, it is inferred that learning is not only about acquiring new knowledge, it can also consist in consolidating, restructuring, eliminating knowledge that already exists; it always involves a change in the brain's physical structure and with it its functional organization, a modification of the students' knowledge and/or cognitive structures, and is achieved from access to certain information, interpersonal communication (with parents, teachers, peers, among others) and the performance of certain cognitive operations.

In a study on academic performance and learning styles in Psychology students conducted at the Autonomous University of the State of Mexico (Saúl, Guadalupe, *et al*, 2011), they conclude that learning styles influence the average of students (numerical representation of the quantitative and qualitative accreditation criteria), but above all in the quality of the learning that is achieved throughout the professional training resulting from an educational process in which three actors are involved: the student, the curricular content and the teacher.

Finally, in a study published in a scientific journal on the factors associated with academic performance in university students (Vargas, 2007), it is concluded that knowing the possible factors that mainly affect academic performance in university students would allow at least, between others, predict possible academic results and be able to analyze their impact on the quality of education expected and be a tool for decision making in this area. You cannot talk about the quality of higher education without knowing in depth indicators associated with the academic performance of university students, because this analysis represents a strategic monitoring in terms of academic performance and therefore the use of resources that the state invests.

Although it is well known that the predictive power of the CHAEA is criticized, as well as its psychometric rigor, its multiple uses and its demonstrated utility in countless works, I allow its consideration as a support instrument for the present investigation.

This work was proposed as a strategy to enrich the teaching work, because it provides us with the indispensable information for the planning of the learning experiences in the classroom and outside of it, of information for the understanding of the student with their individual differences (motivations, styles, processes, practices and interests) or for the understanding of the dynamics of their learning process, will also facilitate the functional mobility

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between the different learning styles and thus contribute to the adjustment of the student to the demanding university context, the teacher becomes involved as a participant in the training process. It should be noted that the research aims to be outlined as a strategy of feedback and operationalization of the institutional pedagogical model and as a beginning for the consolidation of work teams in this important area in the context of university education.

METHOD

Participants

In the present study we worked with the total population; because according to (Núñez Flores, 2014), it is "the set of all the elements that are part of the territorial space to which the research problem belongs", in this case, to all the students enrolled from first to fourth semester of the Bachelor's degree in Chemo-pharmacobiology from the Autonomous University of Chiapas' Faculty of Chemical Sciences in Ocozocoautla de Espinosa.

INSTRUMENTS

The Honey-Alonso Learning Styles Questionnaire (CHAEA) is a dichotomous response questionnaire, individual or group application, consisting of 80 items, 20 for each learning style (active, reflective, pragmatic and theoretical) distributed randomly. The absolute score that each subject obtains in each group of 20 items indicates the level reached in each of the four styles, allowing assessing the preferences of students in each of the styles and obtaining, ultimately, their learning profile.

PROCESS

Once the sampling was done, a schedule for the application of the instrument was organized. The application was made, once given the instructions of the questionnaire, to those who voluntarily wanted to participate in the project. The data was processed in the latest version of the SPSS software.

RESULTS

General Average and Learning Styles

With regard to the correlation between the general average registered by the students and the learning styles, it was observed that there is no statistically significant difference ($p= 0.7748$) between these two variables,

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that is, they have a very similar academic performance with respect to the general average and the learning styles identified, however, it was observed that the best general average was presented by the theoretical learning style with 8.4. See chart No. 1, image No. 1 and table No. 1.

Chart 1. General Average Ratio and Learning Styles

Learning styles	General average
Active	8.0
Reflexive	8.1
Pragmatic	8.2
Theoretical	8.4

Image 1. General Average and Learning Styles
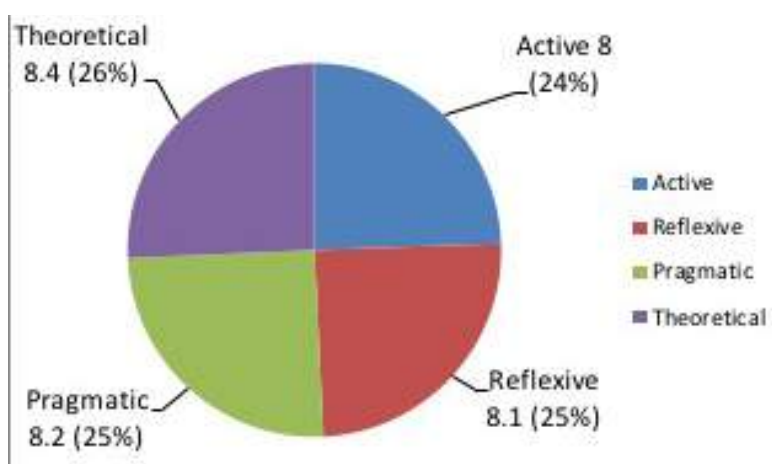
Chart 1. General Average and Learning Styles

```
                    Analysis of Variance for PRO_GEN by E. A.
------------------------------------------------------------------------------
Source              Sum of Squares    Df  Mean Square    F-Ratio      P-Value
------------------------------------------------------------------------------
Between groups          0.988564       4    0.247141        0.45       0.7748
        Within groups          68.0896   123    0.553574
------------------------------------------------------------------------------
        Total (Corr.)                   69.0782   127


                    Multiple Range Tests for PRO_GEN by E. A.
------------------------------------------------------------------------------
                    Method: 95.0 percent LSD
        E. A.           Count    Mean              Homogeneous Groups
------------------------------------------------------------------------------
        Pragmatico      8        8.02625                  X
        Activo          16       8.05938                  X
        Reflexivo       73       8.19507                  X
        Pragmático      19       8.20421                  X
        Teorico         12       8.39333                  X
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The analysis between academic performance and learning styles reveals that the predominant styles were the theoretical and the pragmatic style. This implies that the theoretical style is characterized by the investigation of logic and coherence in the accumulated information, for the sake of analysis and synthesis, an interest for the basic predictions and the underlying principles, a valorization of the rational and objectivity. The pragmatic style is characterized by an interest for the implementation of ideas, theories, and techniques for the purpose of validating the operation; for the preference of solving problems to find concrete and practical benefits. It is also characterized by a marked preference for realistic and practical solutions (Rodríguez Conde *et al.*, 2010).

Cisneros and Robles (2004) (from Adscripción, Bustamante, and Talamante, 2011), say that identifying the preferred learning style of students facilitates the development of techniques and teaching strategies much more effective, favors the creation of a more welcoming climate and promotes a much more active student participation.

In addition, Alonso and Gallego, (n.d), say: it seems sufficiently proven that students learn more effectively when they are taught with their predominant learning styles.

DISCUSSION AND CONCLUSIONS

The data presented allow us to make a very specific analysis for the population evaluated, about the relationships found between the learning styles and the academic performance of the students that made up the sample.

The predominant learning styles were: Active, Theoretical, Pragmatic and Reflective in that order.

This allows students to be characterized as active, open-minded, enthusiastic, easily integrated into groups, spontaneous, but of fragile motivation because they are moved by novelty and immediacy. Likewise, they are shown as practical, direct, effective and realistic people; its strength is the experimentation and application of ideas. On the other hand, they show strengths for the analysis, synthesis and establishment of principles, theories and models. They usually seek rationality and objectivity, discarding the subjective and ambiguous.

The preference for these styles suggests to the teacher to provide 3 groups of conditions, which, according to Alonso, C, Gallego, D. and Honey, P (1999), allow the student to interact in a variety of situations in which he will feel

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comfortable and in readiness to learn: on the one hand it is recommended to provide experiences of cooperative work, problem solving, discussion and debate, as well as the representation of social roles, innovative and ingenious activities, among others, will be motivational conditions for students with greater preferences for the active style, mainly.

Secondly, it requires spaces that allow the student to question, participate actively, perform structured tasks and with a clear purpose, have the possibility of analyzing a situation and have time to explore methodically the relationships between ideas and situations. Students with greater preferences for the theoretical style, will feel motivated in situations of intellectual demand, and while interacting with people of the same level.

In the third instance, as conditions that facilitate student learning, it is suggested to provide knowledge and techniques that may be applicable in a specific context and, in fact, facilitate the immediate implementation of what has been learned.

In view of the above, the preferences of students are suggesting that the teacher is increasingly structured when planning learning experiences, ensuring the articulation between theory and practice and incorporating innovative and challenging methodologies that stimulate the development of thinking skills. From this perspective, it is very important for the student to know WHAT and WHY he is going to learn something, rather than how.

On the other hand, the lowest preference learning style observed in the individual analysis was Reflective, which shows that students prefer action rather than reflection; they can be impulsive, unwise, with limitations to consider different points of view. It is possible that students who are not very reflective to have difficulties to review and return to what they have learned, to self-manage their own process and rhythm of learning, to listen to the point of view of others, to pay attention and observe what others do, for task planning and research.

Since much of the literature suggests the existence of a functional mobility between the different learning styles, it is necessary to provide spaces for the development of metacognitive skills that bring the student closer to reflective styles, to strategic learning, and to the self-management of their own learning process.

According to the literature, the great diversity of concepts, instruments and ways of researching learning styles have limited their ability to predict

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and their reliability, however, we cannot deny the valuable contribution that these studies make, because they allow us to know the student even more in terms of their preferences, needs and limitations; it allows us to re-conceptualize its role in this new model of teaching and learning, while it points out guidelines to design learning experiences that mobilize the development of its potentialities.

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ACADEMIC PAPERS

ROSARIO CASTELLANOS' LESSONS: LITERATURE, HISTORY AND POLITICS

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Rosario Castellanos was not far from the Mexican political circles. She captured the spotlight due to her novels, stories and essays -and the comments that the critics generated around her-, the acknowledgments she obtained, the interviews she gave, her publications in the most important magazines of the time, her articles in *Excelsior*, to her classes at the National Autonomous University of Mexico; in short, to her personal and professional relationship with President Luis Echeverría and with the Mexican government, respectively. In no case did this mean a decrease in her creative freedom. On the contrary, it gave her a privileged space to expose the situations with which she did not agree: women's position and rights in social and productive life, the exclusion of indigenous communities and the vindication of their demands, and the consequences to promote plurality in the different orders of national life.

90 years after her birth, returning to Castellanos' work, beyond the classifications that she has been put in, those of feminist or indigenist, gives us elements to better understand our time.

ROSARIO CASTELLANOS, LIFE MIRRORED IN HER WORK

Biographic notes

Rosario Castellanos Figueroa was born on May 25, 1925, in the capital of Mexico and was taken by her parents, César Castellanos and Adriana Figueroa, a few months later, to Comitán, Chiapas. In the land of Belisario Domínguez, she lived her childhood and adolescence. She moved to Mexico City, at the age of 16, to complete her secondary education studies at the Luis G. León School and, subsequently, to enroll at the National Autonomous University of Mexico (UNAM), first at the Law Faculty and then in the Philosophy and Letters. Her school career in this last faculty, previously located in the Mascarones building, where she was the students' representative between 1946 and 1947, had as a culmination point the attainment of the Master's degree in Philosophy on June 23, 1950, with the thesis *About feminine culture*. Later, she continued her studies and with a scholarship granted by the Hispanic Institute, she embarked, along with Dolores Castro, on the SS Argentina, parting from Veracruz to Spain, where she studied at the University of Madrid to take courses in philosophy, aesthetics and style.

She returned to Mexico in 1952, that same year she decided to move to Chiapas, where she lived with her stepbrother Raúl at his Chapatengo ranch and worked as a promoter of culture at the Chiapas' Institute of Sciences and Arts, in Tuxtla Gutiérrez. From 1954 to 1955, with the *Rockefeller* scholarship

to which she became a creditor, she wrote poetry and essays. From 1956 to 1957, at the Tseltal-Tsotsil Indigenous Coordinating Center, located in San Cristóbal de Las Casas, Chiapas, dependent on the National Indigenous Institute, then directed by Alfonso Caso, she was part of the Petul puppet theater team, formed by Marco Antonio Montero, Theater director; Carlos Jurado, painter, and linguist Carlo Antonio Castro (Navarrete Cáceres, 2007: 13 and Trejo Sirvent, 2008), and from 1958 to 1961 she wrote school texts for the same institute.

From 1961 to 1966 she worked as Chief of UNAM's Information and Press team, under Dr. Ignacio Chávez' rector, and from 1961 to 1971 taught the chairs of comparative literature, contemporary novel and critical seminar in the Faculty of Philosophy and Letters of the same University. Leaving the headquarters of the press, as an act of solidarity in the face of the Rector Chávez' fall on April 26, 1966 she left for the United States to teach, with the quality of *Visiting Professor*, in the universities of Wisconsin, Colorado and Indiana, in 1966 and 1967. In Israel, at the same time as her official responsibility, she was a professor at the Hebrew University of Jerusalem (Gordon, 2013), from 1971 until her death, at the age of 49, on August 7, 1974 (Ocampo, 2004: 17-18).

The author of *Los Convidados de Agosto* arrived in Israel in March 1971 to serve as Mexico's ambassador, just after said country had occupied Lebanon. The agitated and constant military movements and protests throughout the world, characterized the years in which she lived in Jerusalem. About her diplomatic mission, there are no records that transcend the issues of ordinary resource management for the Embassy's headquarters or staff salaries. Their political reports cannot be located in the Genaro Estrada Historical Archive of the Ministry of Foreign Affairs, they may be lost or misclassified, the director of the archive, Jorge Fuentes (Gámez, 2014), acknowledged.

In Castellanos' career it can be highlighted the exercise of teaching. The quality and depth of her classes, as recorded in testimonies of the time, attest to this. Cristina Barros, daughter of Eng. Javier Barros Sierra, UNAM's rector in the dark times of 1968, for example, said that the courses she taught on the life and work of Marcel Proust and Gabriel García Márquez were splendid:

it mattered to her that the young people had read and studied the text, relying on some bibliography, [...], although it interested her just as much, if not more, the phenomenon of when the students relived that Marcel Proust's text, but from the experience of their own lives. In this way, literature was

nourished through the vision of young people, who were developing as humans from their real and mysterious link with the art of literature (Lavín Cerda, 2007: 56).

Aurora Ocampo (1994: 312-313) on this same subject pointed out:

who had not had Rosario as a teacher, had not really known her. Why? Because maybe, in those moments, in front of her students, teaching her class, it was like Rosario expressed herself better. She gave herself entirely, which made us always look forward to the day and time when we had one of her chairs [...] We owe her the love and learning to analyze contemporary narrative, especially that of our America. She taught us to read, to really see behind the written lines what the text wanted to tell us.

Indigenous people and women

Her first narrative work was the novel *Balún-Canán*, published in 1957, for which she received, a year later, the Chiapas Prize. Three years later, *Ciudad Real*, her first book of short stories, deserving the Xavier Villaurrutia Award 1961, and *Oficio de tinieblas*, her second novel, was published in 1962, and with it she was awarded the Sor Juana Inés de la Cruz Prize. These books form the most important indigenist trilogy of the Mexican narrative, although their indigenism is peculiar: "it presents the indigenous peoples from within, with characteristics of every human conglomerate, only extremely exploited. As in any exploitation, this does not make them better, so she does not idealize them, but describes chamula like any other human being, with their defects and qualities "(Ocampo, 2004: 18).

Castellanos suffered, as follows from the review of her publications, product of her acute sensitivity, the sadness resulting from perceiving the other, the indigenous, as equal and recognizing that, at least in her time that was not a reality. The indigenous lived segregated and oppressed. There was a kind of *apartheid* in Mexico (Serur, 2010: 269-270). Our writer, from a very early age, was linked to that secluded world through Rufina, her native nanny and Maria Escandón, her playmate and loader.[1] This cir-

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1   "This institution -that of the indigenous girl- was in all its splendor and consisted in the fact that the son of the bosses had to entertain themselves, in addition to their toys that were not many and too naive, a creature of the same age. This creature was sometimes a companion with initiative, with an inventive capacity, who participated actively in his games, but sometimes it was also only a mere

cumstance is not minor if it is noticed that in the novel *Balún-Canán* is the nameless nanny, who accompanies the girl throughout the novel, perhaps the most important character (Serur, 2010: 270). In her work there is a criticism of the project emanating from the Mexican Revolution, because the stability of its social order was based on structures of submission for women and indigenous people.

In addition to the interpretation on the indigenous' social conditions, particularly in *Oficio de Tinieblas*, we can find features of what is known as indigenous legal pluralism, since in the novel appears three legal orders: that of San Juan Chamula, that of Ciudad Real (San Cristóbal de Las Casas) and that of the federal government, represented by the agrarian reform (Berumen Campos, 2012: 5-26).

A work of Castellanos that portrays the situation before and during post-revolutionary Mexico is *Salomé*, located in the Porfirian period to mark the absence of changes in the female situation, which includes elements of utopia and dystopia to criticize the limitations imposed on women in a quasi-colonial society divided by conflicts of race, class and gender, despite the achievements of the Revolution (Swanson, 2012: 437-438). Salomé is written in verses whose lyricism recalls Sor Juana Ines de la Cruz' theater, set in San Cristobal de Las Casas at the time before the 1910 movement and in the context of an uprising of indigenous Chamulas (Swanson, 2012: 440).[2]

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object in which the other unloaded his humors; the inexhaustible energy of childhood, boredom, anger, the bitter zeal of possession.
I do not think I have been exceptionally capricious, arbitrary and cruel. But none had taught me to respect more than my peers and of course much more to my elders. So I let myself be carried by the current. The day when I was suddenly devastated, the thing that I used was revealed to me, I made an instant decision: ask forgiveness to the person I had offended. And another for the rest of life: not take advantage of my privileged position to humiliate another "(Poniatowska, 1990: 499).

2   "Among the most important changes the author makes to adapt the plot to the Mexican context, it is highlighted the absence of the dance of the seven veils by which the image of Salomé is universally known. Castellanos replaces the intense passion that Salomé feels for Juan Bautista, an even greater return the more the prophet rejects her, for the attraction that the protagonist feels for the indigenous cacique. In this way, the attraction towards the forbidden is what triggers the process of individuation of the protagonist, the separation of the mother, the rejection of the rules of her class, her rebellion. [...] it is important to note that the script is faithful to the expectations of a patriarchal society, given that the realization of the individuality of the woman is calculated to be loved by a man. However, following Doris Sommer, it is possible to read Salome's wish as a metaphor for the desire to integrate indigenous culture into the national culture and its rebellion as an attempt to overcome the limitations imposed on it by its gender. In this way, on the one hand, the relationships that mother and daughter have with the class in power to which they belong and from which they derive their power with respect to the indigenous population are analyzed; and on the other, how this same system that gives them power over the indigenous, oppresses and limits them. Likewise, the problem of women

In the different texts of Rosario Castellanos there is a registry for many women, because Castellanos was, at the same time, many Rosarios: "the woman, the mistress, the person of her time, the Chiapanec, the diplomat, the mother of Gabriel, the wife, the heiress of a dynasty of landowners in the poorest state of the Republic, the professor of the UNAM, the journalist, the feminist, etc."(Serur, 2010: 269), and each record is specified in each literary genre she approach.

Mexican political system

As if she had traveled in time, exactly to 1932, when the censorship of the *Examen* magazine, directed by Jorge Cuesta for having published a fragment of the novel *Cariátide* by Rubén Salazar Mallen and that, according to a "Public Health Committee", was immoral and contained inappropriate language, Castellanos could observe when she returned to Mexico, after her stay in the United States, how pornography was denounced, although as she warned shortly after, the target of the attack was not pornography in itself, but some magazines. In this regard, it should be reminded that Mariano Azuela, in relation to the *Examen* dispute, he said: "a work of art is not moral or immoral. Like every work of art, it is subject only to its own laws." Censorship is, in other words, an attack on the most prestigious freedom of the individual: that of decision; in this case, the freedom to decide what to read. That happened in 1932 with Cuesta, who obtained an acquittal sentence, and returned to having, 45 years later, in Rosario Castellanos a sharp observer.

She never confronted the State in an open manner, but her articles published in *Excelsior* were sharp enough for the reader to realize that they were an act of faith towards their intellectual honesty (Castro Ricalde, 2008: 82). This honesty is reflected, to name a subject, in the complaint made in favor of women, years before the issues of equity, empowerment and autonomy; in short, those that affect the personal life of women and their expectations were the subject of the daily press. On the other hand, her intellectual honesty has one of its moments of greater clarity with the articles that questioned the performance of the government in the 1968 student movement.

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like the indigenous nanny is examined, that for serving in the house of the employer, they are rejected by their own culture, although they do not have a place in the culture of the masters. To this effect, the action of the drama revolves around four key dialogues: between Salomé and her mother; between Salomé and the nurse; between the nurse and the indigenous cacique; between Salomé and the indigenous cacique "(Swanson, 2012: 440-441).

It does not escape our attention that her last article with a socio-political theme, published prior to the events of October 2nd of that year, was September 21st and a new text of hers that addressed the issue, in a particular way the search for the truth in relation to what happened in October, appeared on the four days of the year 1969.

Nobody understood anything and that is why, accompanying these pages with testimonies of good behavior, I allow myself to ask you [the Magi] an explanation: What happened here? Or is it that nothing has happened here? Can a regime be called democratic, at whose top the mystery reigns and in which the truth is the heritage of a few initiates who, when they speak, are like enigmas? Can there be a participation in political life, let alone a majority that lacks formation, but also a minority that is totally lacking in information? The oracles boast of their knowledge: they know who are the promoters of the agitation, they are aware of their plans and they have even calculated the dates on which those plans are going to be carried out. Why then keep the secret? Why do they prefer that rumor, suspicion, alarm with or without foundation reign and be spread? (Castellanos, 2006: 213).

Let's see another example: her article "Freedom and taboo: limits of a right", appeared on June 13, 1970. In this document, the author refers to the role of the media and the distortions that make the news and the taboos that exist in the journalistic medium. She writes a very strong criticism about press "freedom":

But it is also true that, in a tacit way, there are a series of conventions, rules that do not appear in any code but that do not have less force, according to which it is preferable not to touch certain topics or to do it with maximum delicacy, with the pincers of the most exquisite caution, with distinctions and allusions and elusions so subtle that they end up worth less than silence (Castellanos, 2006: 490).

In November 1970 she returned to October of '68 in "Amnesty: need to be safe and calm":

Since 1968, since the events of Tlatelolco that can be mentioned seeing that the President of the Republic himself, Díaz Ordaz, has spoken about them in a recent and long interview that illuminates many obscure points of our contemporary history, it has been argued that the students are, innocent themselves. But their very innocence makes them easy prey for agitators in the pay of foreign interests and strangers to us, to our idiosyncrasies, to our needs, to our ambitions.

Those interests have never been specified and their servants have remained unpunished and in the shadows. However, we have to give assent to these explanations because the mystery is the aura that continues to surround the events of recent years. And because small people, ordinary citizens, we do not have access to the place where that mystery is unveiled. (Castellanos, 2006: 605-606).

Rosario Castellanos showed her solidarity with the young Mexicans and her questioning of the Republic's government by giving Elena Poniatowska the poem "Memorial of Tlatelolco", written especially for the book *La noche de Tlatelolco. Testimonios de historia oral.*

The Mexican State developed an agenda in which the figure of Castellanos, despite her interventions in the press, far from being a severe criticism for the government, favored her speeches and legitimized the institutions. By discursive coincidences, what she wrote about indigenous people and women coincided with the expressions of three presidential administrations: Adolfo López Mateos (1958-1964), Gustavo Díaz Ordaz (1964-1970) and Luis Echeverría Álvarez (1970-1976). These years were marked by accelerated economic growth, the expansion of social policies, and accelerated urbanization; in short, the general improvement of living conditions. It was the time of the "Mexican Miracle". The official discourses and public policies designed and implemented in those decades were focused on the peasant and indigenous areas; the progress and growth of small cities, and mitigate economic and social imbalances to achieve greater social justice. Castellanos' clear and direct style did not represent an inadmissible criticism for the government, except for her articles on the student movement.

The active sectors in those years were peasant and indigenous -to some extent stimulated by the presidents themselves, in a particular way Luis Echeverría- were those who, from the time of Lázaro Cárdenas' presidency (1934-1940), felt the protection of the authorities "[and] this gave them strength and courage to fight against oppression, against the abuse they have been subjected to up to that moment" (Rodríguez Chicharro, 1959: 63).

Perhaps one of the explanations we can give to the collaboration of Castellanos with Luis Echeverría's government is one that places the new opening political speech of the regime and of rapprochement with young people and the country's artistic, academic and intellectual community (Agustín, 1992: 17). This opening had, as a result, a series of reforms in electoral and political matters.

One of the most important moments of the writer's public life was when, in 1971, at the National Museum of Anthropology, she denounced and condemned, through the speech "The abnegation, a mad virtue" the injustices suffered by women in the presence of the President Luis Echeverría. This act contributed to Castellanos becoming the most recognized writer of her time and served as an ante-room for Mexico to host the International Year of Women and the Women's Tribune Conference sponsored by the United Nations in 1975. Surely, she would have played a leading role in these international events.

Self-sacrifice was defined in that speech as: "one of the most praised virtues of Mexican women whose effect contravened any aspiration of equity or justice for the female sex" (Cano, 2014).

> *It is not fair -and therefore it is not legitimate either- that one of the two that take part in a couple of everything does not aspire to receive anything in return.*
>
> *It is not fair -so it is not legitimate- that one has the opportunity to train themselves intellectually and the other has no alternative but to remain plunged in ignorance.*
>
> *It is not fair -and therefore it is not legitimate- that one finds in work not only a source of wealth but also the joy of feeling useful, a participant in community life, carried out through a work, while the other meets with a work that does not merit remuneration and that hardly mitigates the experience of superfluity and isolation that suffers; a work, which by its very perishable nature, can never be taken for granted.*
>
> *It is not equitable and contrary to the spirit of law that one has all the freedom of movement while the other is reduced to paralysis.*
>
> *It is not fair -then it is not legal- that one is the owner of its body and disposes of it as one wants while the other reserves that body, not for its own purposes, but for to fulfill in it other people's processes against one's will (Castellanos, 1992: 291).[3]*

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3   The speech was published on February 21, 1971 in "Diorama de la Cultura" of the newspaper *Excelsior*.

On the other hand, it is necessary to stop and observe that Castellanos' action, in the spaces that the official institutions granted her, allowed her visibility. She ventured into areas of difficult access for women writers of her generation. "The official *authorization* to talk about issues related to indigenous people and feminism, legitimized her before certain sectors and ended up discrediting her in front of others" (Castro Ricalde, 2008: 98).

Their own gender condition was exploited by the authorities through the Ministry of Public Education (SEP), in a special way, and other agencies. The edition of some of her books was in charge of said ministry and the National Institute of Youth; for example, *The contemporary Mexican novel and its testimonial value* was published by the National Institute of Youth in 1966; *Woman who knows Latin* received the auspice of the SEP, and appeared in 1974, in her collection Sepsetentas, and *The sea and its fishes*, was integrated into the catalog of the referred collection, appearing posthumously in 1975, and several of the awards received, were sponsored by the federal government. It cannot be said that there was no contact between her and the State.

FINAL APPROACHES

Making an examination of Castellanos' life and work, and of the circumstances in which she developed, with the disagreements and the awards and honors received, there are those who affirm that:

> *Before the Chiapaneca, no other female author had had a real and tangible power like hers; evident power just by remembering the level of access to public, political and media forums [...] and whose sad end point made it more notorious, as her remains were deposited in the Rotunda of the Illustrious Men [today called Rotunda of the Illustrious People, by the presidential decree issued on February 26, 2003] (Castro Ricalde, 2008: 88).*

Of 115 people who lie in this pantheon of the Republic, only eight are women, almost seven percent: Dolores del Rio, Rosario Castellanos, Virginia Fabregas, Emma Gody, Amalia González Caballero de Castillo Ledón, Marí Izquierdo Gutiérrez, María Lavalle and Ángela Peralta and - with the exception made for Castellanos - received tributes after her death.

Rosario Castellanos maintained a close relationship with the government and, at the same time, independence. Her different works in the National Indian Institute, in the Chiapas' Institute of Arts and Sciences, in the UNAM or in the Chancellery, confirm it. She was a writer close to power and, by participating in official events, allowed the public agenda to be expanded by

remembering the conditions of inequality in which the indigenous people and women lived (still live?). Her appointment as Mexico's ambassador to Israel was an acknowledgment of her career.

Castellanos' work proposes, repeatedly, the search for identity, that true identity, be it for indigenous minorities, for women or, even more, for Castellanos herself.

Her political and intellectual independence earned her honorable comments from members of the culture. Huberto Batis (1966: VIII), for example, pointed out that she was an "intellectual with sharp tongue" and that "she has given repeated examples, with her public performance and not only with literature, of fighting for intelligence against all strength."

In these first three decades of the 21st century we need people who emulate the tenacious search for truth, clarity of thought and the fine writing of Rosario Castellanos.

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TRENDS IN TELE-HEALTH IN CHIAPAS

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— *Abstract*—

In Chiapas, a tele-education network was established in 2006, with the aim of providing training in the medical centers included in the *Seguro Popular* Program, the hospitals of high specialty of Tuxtla Gutiérrez, Tapachula and the General Hospital of Palenque [1]. Tele-health aims to combat the backwardness of access to health services and second- and third-level health care in rural communities in the state. The use of technological tools substantially improves the delivery of health services in medical centers. At the Polytechnic University of Chiapas, in collaboration with the Center for Cancer Research and Prevention, A.C. (CEPREC), a platform for electronic health records has been developed based on norms NOM-168-SSA1-1998, NOM-004-SSA3-2012, NOM-024-SSA-2012, NOM-220-SSA3-2012, for the standardization of information structure, in order for this to be implemented, in the future, in health units of the different levels, both public and private, and finally centralize all clinical information of the patient.

Keywords

Electronic Medical Records, Teleeducation, Telemedicine, Telehealth, ICT.

TELE-HEALTH

Tele-health, including telemedicine, involves the delivery of health services using Information and Communication Technologies (ICT), specifically when distance is an obstacle to health services [2]. Telemedicine, a term coined in the 1970s, literally means "to cure at a distance." The World Health Organization (WHO) defines telemedicine as the contribution of health services, where distance is a critical factor, for any health professional, using the new communication technologies for the valid exchange of information in the diagnosis, treatment and prevention of diseases or injuries, research and evaluation, and continuing education of health providers, all with the interest of improving the health of individuals and their communities [2].

The first indication of telemedicine goes back to the beginning of the 20th century when the data of an electrocardiograph were transmitted through telephone cables. Subsequently, the use of television was included to facilitate consultations between specialists in a psychiatric institute and general practitioners in a state psychiatric hospital, and the provision of expert medical advice from a teaching hospital to an airport medical center. Telemedicine, in its modern form, began in the 1960s [2].

In the last decade, new possibilities for the provision of health services have emerged thanks to advances in the use of ICTs by the general population, mainly in developing countries and in underserved areas of the industrialized nations. The replacement of analog forms of communication by digital methods, combined with a rapid decline in the cost of ICT, has created a great interest in the application of telemedicine among health care providers and has allowed health organizations devise and implement new and more efficient ways of providing care. The reach of telemedicine has been greatly expanded thanks to the introduction and popularization of the Internet, which has further accelerated the pace of ICT advances, which has allowed the use of Web-based applications (for example, electronic mail, tele-consultations and conferences through the Internet) and multimedia tools (for example, digital images and video) [2].

Normally, tele-health activities are associated with tele-consultation (distance medical specialty consultation) and tele-education (continuing education and medical training at a distance) [4], however, the advancement of technology, the incorporation of electronic systems and the use of mobile devices, facilitate the remote medical care activities that are part of the activities of tele-health, such as: medical consultations and inter-consultations using

chats or smartphones among other activities. The services included in tele-health are the following [3]:

- Inter-consultation. Process by which a health service provider requests assistance from one or more health specialists in relation to a clinical case for diagnostic or treatment purposes.
- Query. Process by which the doctor provides patient care, assessing their health status and risk factors in order to detect early circumstances or pathologies that may alter their development or health.
- Second opinion. Process by which the patient requests the opinion of a doctor or group of doctors other than the doctor who issued the first diagnosis on these aspects, in order to confirm the provision of the health service.
- Medical advice. Process through which a dialogue and interaction between a health professional and the consultant is carried out, in order to offer emotional support, information and education about health care.
- Monitoring of patients. Process by which the health professional can follow up on the evolution of the patient after a consultation.
- Diagnostic interpretation. Process by which a health professional issues a diagnosis or analysis based on laboratory and/or cabinet studies.
- Health education. Process through which an interpersonal communication is carried out aimed at the population, in order to promote improvements in lifestyle for the benefit of their health.
- Health training. Process through which health professionals are summoned, in order to carry out academic activities.
- Service coordination. Communication process through which the human and material resources of health institutions are coordinated to provide services.
- Visitor's pass. Daily observation process that is done to patients admitted by health professionals, in order to assess their health status, review their evolution and make the necessary indications for recovery and rehabilitation.

TELE-HEALTH IN MEXICO

The use of ICT in the health sector of Mexico began in the late 1970s with the COPLAMAR Plan where radio communications were used in civilian bands. In 1985, tele-education transmissions began at the Children's Hospital of Mexico, with the CEMESATEL program. In the early 1990s, the Ministry of Health and Welfare (SSA) established the coverage extension program using radio communications [4].

In 1995, the Institute of Social Security and Services for State Workers (ISSSTE) developed an institutional tele-health program through a computerized link system for transmission and reception via satellite for audio, video and data. The program includes 18 telemedicine sites, located in medical units of the second and third level of care, where the National Medical Center, in Mexico City, was a provider of tele-consultation in the form of medical consultation and tele-education for 17 medical units with lower resolution capacity in the north, south and southeast of the country. From 1995 to 2007, through this type of service, the institute made 20,615 tele-consultations [4, 8]. Since 2002, ISSSTE has been developing an electronic clinical record program which records medical procedures and scheduling online appointments to its information portal [4].

In 2001, the legal reforms of the Mexican Institute of Social Security (IMSS) and the modernization project allow the use of the electronic clinical file. In 2002, within the National Health Program, the first e-Health Action Program (2001-2006) was incorporated, which includes the telemedicine component [4].

After an educational reengineering focused on innovation and technology, in 2005 the National Institute of Public Health incorporated in Mexico the use of ICT in education creating virtual learning environments. This involved the pedagogical redesign of postgraduate programs, developed under a new approach of competency-based education, and the incorporation of technological-educational platforms as tools or means of education delivery [1].

Gradually the national tele-health network was formed, with the participation of the State Health Services (Puebla, Oaxaca, Chiapas, Guerrero, Nuevo Leon, Tamaulipas, Zacatecas), the Unified Network of the National Institutes of Health in 2006, through the Coordinating Commission of National Institutes of Health and High Specialty Hospitals and the University Corporation for the Internet 2 Development (CUDI). Until 2006, the tele-health services that were developed in Mexico are tele-education, and the attention of the specialties radiology, cardiology, gynecology, pediatrics, ophthalmology and dermatology mainly [4].

As of 2007, ISSSTE initiated the national telemedicine program, which was constituted with 177 health units, with qualified human resources and advanced technology telecommunications equipment, such as medical videoconferencing equipment and a network to provide connectivity to the telemedicine sites and expand coverage throughout the national territory. From 2009 to 2011, the telemedicine program carried out 310,800 tele-consultations in medical specialties such as dermatology,

ophthalmology, traumatology, orthopedics, oncology, urology, internal medicine, otorhinolaryngology, cardiology, gynecology, neurology, allergology and maxillofacial [1].

In 2012, state tele-health coordinators were established, thus reinforcing the quality control of the provision of the necessary health care. In this same year, the National Tele-health Observatory was developed, which aims to have a reference framework, provide relevant, up-to-date and high-quality reliability information to be shared among health professionals [5, 6].

TELE-HEALTH IN CHIAPAS

The health secretariat of Chiapas, in 2006, developed a tele-education network in the medical units belonging to the Popular Healthcare program and in the highly specialized hospitals of Tuxtla Gutiérrez, Tapachula and the Palenque's general hospital, which have already been incorporated into the tele-health services network, with the aim of training the staff of these units [1, 4].

Due to the population dispersion of the state of Chiapas, there are 20 municipalities with a lower rate of human development, where it is necessary to adopt strategies to provide health services to these communities. For this reason, the State Telemedicine Network has emerged, which has benefited 10 municipalities with a lower rate of human development, located mainly in the highlands region [1].

Until 2012 the results were the implementation of a complete connectivity system in 235 medical units, with Internet and IP telephony service, an electronic clinical file system was developed in 141 medical units, and the integration of the State Telemedicine Network in the state by equipping 34 medical units of first and second level, to operate the telemedicine and tele-education program in Chiapas [1].

For the start-up of tele-health systems, it is essential to have an adequate telecommunications network, which is currently not widespread throughout the state's territory and in some cases does not meet the minimum requirements to support the transfer rate in the exchange of information.

The information presented in the CENETEC tele-health observatory in its section of information by States, collects in Chiapas' general record, that until the first semester of 2016 there are tele-health services in 13 Medical Units (MU) and in 4 mobile medical units (MMU), where the services they

provide are all tele-consultation and in 7 MU there are also tele-education, managing satellite type connectivity, dedicated link, ADSL and microwave [7].

The economic problems, which the country has experienced in recent years, influenced the stagnation of the start-up of tele-health systems already implemented in the State. Currently, the Ministry of Health of the state of Chiapas is working with the corresponding agencies to establish the mechanisms for the operation of the tele-health systems.

TELE-HEALTH TENDENCIES IN CHIAPAS

The lack of infrastructure in telecommunications should not be limiting for the operation of the tele-health systems already implemented. Under this tenor, it is necessary to look for new strategies to operate tele-health in the State, not only focusing on telemedicine in real time (online). The development of a system whose premise is working in deferred time (offline), will allow first level medical units to adopt the norms and standards in the use and management of their information, with the objective that they can export and store the information generated, in centralized servers and managed by the Ministry of Health.

TECHNOLOGICAL DEVELOPMENTS CARRIED OUT AT UPCHIAPAS

The academic body of researchers of Biomedical Engineering of the Polytechnic University of Chiapas, together with researchers from the "Center for Studies and Prevention of Cancer AC" (CEPREC), have worked on the development of an electronic clinical file, with the objective of a quantitative analysis of the information stored in it, based on the collection of information and data on cancer patients. These data were collected at the Polytechnic University of Chiapas, in digital thermal mammography campaigns, through the platform "Electronic clinical record system for the Center for Cancer Studies and Prevention (CEPREC)", which is aligned with national standards Such as: NOM-220-SSA3-2012, NOM-168-SSA1-1998, NOM-004-SSA3-2012, AND NOM-024-SSA3-2012. These standards provide the minimum structure for the electronic storage of the patient's information.

For the realization of this system it was necessary to use specific software and hardware. The developed elements and their characteristics are described below:

Software

- Web design. Planning, design and implementation of the website.

The platform has 4 user profiles, these are:

- ° Administrator. The administrator has the permissions to manage the information of the platform, these data are: creation of new users (doctors, nurses, patients), modification of data, activation and deactivation of the bank of questions in the platform, generation of recipes and of standardized digital formats.
- ° Doctors. The doctor will be able to record the patient information in the following sections: Summary of the patient's history, Diagnosis due to Conditions, Medical Recipes, Searches, Monitoring and Control of drugs.
- ° Nurses. The nurse is in charge of generating appointments, stores vital signs information and monitors the patients' evolution.
- ° Patients. The patient visualizes the information of: Diagnoses, Recipes and Appointments.

- Basic software configuration. Contemplates the operating system and database manager.

Hardware

- Computer equipment. Computer where the base software is located.
- Connectivity. Depending on the type of system implemented, the work stations communicate through data networks in Local Area Networks (LAN).
- Server. For the storage and processing of the information was necessary a computer with 2 Intel Xeon processors at 2.43 GHz, 16 GB DDR3 RAM, 8 hard drives in ARAID up to 3 TB and GigaE card, for sending information through the net.

The information generated by this institution is important, since it allows to have statistics of the population, locate specific sectors, thus being able to carry out prevention campaigns in sectors with a high rate of oncological diseases. The analysis of the information collected will be very important to identify patterns in the incidence of cancer.

CONCLUSION

With the telecommunications infrastructure that currently exists in the state of Chiapas, it is not possible to operate tele-health systems, especially telemedicine in real time. The lack of a telecommunications infrastructure and the high costs involved in satellite communication mean that it is not possible to operate these systems in communities with a lower rate of human development, which are a priority for the State.

The development of proprietary technology by higher education institutions of the State can be a good strategy to operate some areas of tele-health. From an academic point of view, it has the knowledge and cutting-edge technology for development and innovation in this area.

The Polytechnic University of Chiapas, being a public institution and with a clear objective that is the scientific and technological development of our region, allows the link with the productive sectors and service related to health, both in public and private initiative. From there, we see as an area of opportunity to be one of the promoters with the Ministry of Health of the state of Chiapas, to work on a project, where a standardized tele-health system is developed in the public and private sectors, managed through the Ministry of Health, so that in the future there may be a unified system of electronic clinical records per patient.

It is important to continue developing platforms that facilitate the collection of information from the electronic clinical file in a deferred way (offline); this will benefit the most vulnerable sectors of the population, thus allowing access to health care, with special emphasis on rural communities.

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RISK FACTORS RELATED TO ACUTE RESPIRATORY INFECTIONS IN CHILDREN UNDER FIVE YEARS OLD IN A POPULATION WITH A HIGH DEGREE OF MARGINALIZATION OF THE STATE OF CHIAPAS

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Risk factors related to acute respiratory infections in children under five years old in a population with a high degree of marginalization of the state of Chiapas

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— *Abstract*—

Lower respiratory tract infection (LRTI) have a high prevalence in the child population of Mexico. In the southern state of Chiapas, epidemiological records give above national figures. These diseases have a multifactorial etiology, one of the contributing factors being the marginalization level; thus, this paper aims to identify some risk factors related to LRTI in children under five years in a population with high marginalization level in Chiapas state.

Methodology

This is a correlational descriptive prospective study conducted in 2016. The sample was formed by 208 children of Pueblo Nuevo Solistahuacán, Chiapas. Data collection was done by a 22 items questionnaire comprising four sections: food intake, hygiene habits, prevention actions, and LRTI frequence, besides a demographic data section. Data analysis was performed with SPSS v24 software, using Xi^2 test and odds ratio.

Results

It was found that 93.1% of the study population is affiliated to "*Seguro Popular*" social security program, more than a half have an income between MXN $200 (about USD $10) and MXN $500 (about USD $30) per week, and the average number of family members was 5.46. Three risk factors related with LRTI were identified: use of non-potable water (OR=19.6, li=1.846, ls=2.471), incomplete vaccination scheme (OR =5.051, li=1.808, ls=14.111), and intake of non-disinfected foods (OR =3.290, li=2.673, ls=4.050). It was found a significative relation between uncompleted vaccination scheme with flu (Xi^2=11.86, *p*=0.001), and between the intake of non-potable water with otitis (Xi^2=8.06, *p*=0.0005).

Conclusion

The child population is very sensitive to LRTI and the risk is higher in marginalized zones. This study found that bad hygiene practices and an incomplete vaccination scheme are the main factors of LRTI morbidity.
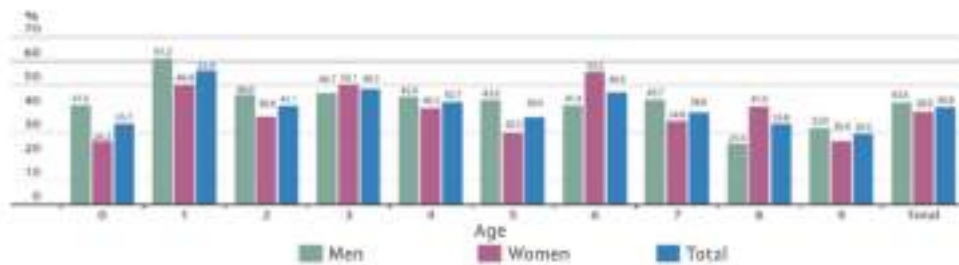
Keywords

Lower respiratory tract infection, risk factors, children, marginalized area.

Risk factors related to acute respiratory infections in children under five years old in a population with a high degree of marginalization of the state of Chiapas

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Acute Respiratory Infections (ARI) are defined as the set of communicable diseases of the respiratory system that includes from the common cold, otitis, tonsillitis, sinusitis, acute bronchitis, laryngotracheitis, bronchiolitis and laryngitis; with an evolution of less than 15 days, with the presence of one or more clinical symptoms such as: cough, runny nose, nasal obstruction, odynophagia, otalgia, dysphonia, noisy breathing and respiratory distress; that may or may not be accompanied by fever (Ferreira-Guerrero *et al.*, 2013).

ARIs are considered one of the main causes of morbidity and mortality in the world. It is estimated that four million deaths occur each year related to this cause, with the group of children under five being the most vulnerable (Undersecretary of Health Sector Integration and Development, 2015). In Mexico, according to what is reported by official statistics, ARIs occupy the first place as a cause of hospital morbidity and discharge in children under five years old (Directorate General of Epidemiology, 2010, cited by Ferreira-Guerrero *et al.*, 2013). According to Gutiérrez, *et al*, (2012), annually the infant population presents between two and four episodes of respiratory infections, although this figure can increase up to eight events per year. Between 80% and 90% the origin of the cases is viral and they occur in a short period of time, although sometimes they can have complications of long evolution such as pneumonia.

In 2012 in the state of Chiapas, the prevalence of ARI reported in the population of children under five years old was 44.3%, while at the national level was of 44.8% respectively. Also, as shown in Figure 1, the percentage of children affected by ARI in the state was 42.6%, while the percentage of girls was 38.9%, for the group under 10 years (Gutiérrez, *et al.*, 2012).

Figure 1. Distribution of the population under 10 years old, according to the presence of acute respiratory infection, by age and sex. Chiapas, Mexico ENSANUT 2012

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This same survey reported that the highest prevalence of ARI in children under five years old was in the group of 7 to 11 months, with 50.5% (95% CI 45.8-55.2); compared with children from 2 to 6 months who had a prevalence of 35.5% (95% CI 31.6-39.6). The male/female ratio for 2012 was 0.9: 1, and by area of residence it was consistently higher for the urban area. The prevalence in relation to the population with the lowest socioeconomic status showed a significant decrease going from 47.6% (IC95% 45.6-49.7) in 2006 to 42.3% (IC95% 40.3-44.3) in 2012. In figure 2, it can be seen that the group of children who presented a higher percentage of ARI two weeks prior to the interview was the one with the youngest children, those of five years for both sexes.

Figure 2. Percentage of the population under 10 years old that had a respiratory infection in the two weeks prior to the interview. Chiapas, Mexico, ENSANUT 2012
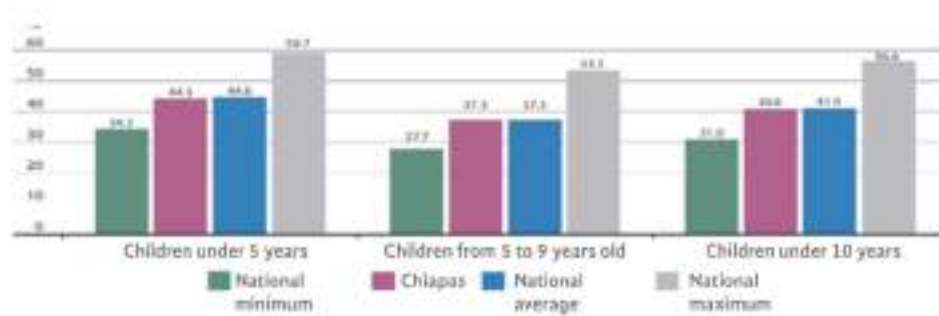
IIn the bibliographic review presented by López, *et al*, (2016) it was found that the factors related to the appearance of ARI can be social, cultural, environmental and individual. Within the latter, there are those concerning the immune status of individuals, associated pathologies, null or short breastfeeding duration, low birth weight and age. Some research such as that of Martín, *et al*, (2017) establish overcrowding, smoking, inadequate breastfeeding and unacceptable socioeconomic status, as the risk factors most frequently presented in children under five years old from Cuba.

On the other hand, López, *et al*, (2014) point out that malnutrition and poor hygienic practices are other common risk factors, because the consequent immunodeficiency increases vulnerability to infections such as ARI, a factor that Reyes, Beltrán and Astudillo (2015) confirm in their study conducted in a population with similar characteristics of Ecuador.

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The general incidence of ARI for the Mexican population in 2016 was 19, 174.82 (rate per 100.00 inhabitants), with a total of 6,291,761 cases reported in children under four years old for the same year (SUIVE, 2016).

Risk factors related to the ARI's incidence are diverse and many of them are related to social determinants such as poor living conditions, difficult access to health services and lack of technical skills and interculturality from the health personnel, as pointed out by Duarte-Gómez, *et al* (2015), in a study conducted in 16 municipalities with a low human development index in Mexico, including the state of Chiapas; where we investigated the social determinants of infant mortality and the main causes such as respiratory diseases.

In this sense, Chiapas is one of the states of the Mexican Republic where socio-economic problems prevail which affect its epidemiological profile in a substantial way. According to the Main Results of the Intercensal Survey INEGI, (2015), the state is composed of 119 municipalities, with a total population of 5 217 908 people, with a growth rate of 1.8 percent (0.3 percentage points less than in 2010) and which continues to be one of the states with the lowest urban population. In terms of ethnicity, the number of people aged 5 and over who speak an indigenous language was 1.1 million in 2010, while in 2015 according to this same survey, 1.3 million indigenous language speakers were estimated, which represent 27.8% of the 5 years and over population.

Poverty and marginalization are social determinants that significantly affect the health situation in the state of Chiapas. In 2014, the percentage of citizens living in poverty was 76.2%, with an important difference considering that the national average for that same year was 46.2% (CONEVAL, 2014). Regarding the degree of marginalization, according to the 2010 report issued by the National Population Council (CONAPO, cited by Trujillo, *et al* 2014), Chiapas was considered one of the three main states of the Mexican Republic with the highest index and grade of marginalization, with a value higher than two units and a very high degree. Likewise, the illiteracy rates are the highest in the country (exceeding 16%), and where more than 32% of the population aged 15 and over have not completed their primary education. In addition to all this, the geographical and cultural characteristics of the state make access to health services difficult. Particularly in the municipality of Pueblo Nuevo Solistahuacán, there was a high level of marginalization (SEDESOL, 2012); and a 37.7% lack of access to health services (CONEVAL, 2010).

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In agreement with the above, the present study aims to identify the risk factors related to ARI in children under five years old, in a population with a high degree of marginalization in the state of Chiapas.

METHODOLOGY

The present research work corresponds to a prospective descriptive correlation study, whose population was integrated by 208 children of both sexes, under five years old belonging to a nucleus of attention of the Pueblo Nuevo Solistahuacán's Health Center in Chiapas, Mexico, from October to November 2016. For data collection, a 22-item instrument was designed that included five sections: demographic information, food consumption, hygienic practices, preventive practices (immunization scheme checked against the vaccination card) and ARI frequency reported in the month prior the interview.

The data collection was carried out through house-to-house visits and interviews of the mothers and/or primary caregiver with infants who met the specified inclusion characteristics. The data analysis was done through the statistical program SPSS v24 (licensed for Linda Vista University). The demographic variables were analyzed by descriptive statistics. To establish the risk and the relationship of the variables, the statistical tests Xi^2 and Momios ratio were used.

RESULTS

The study population was formed by children of both sexes (*n*=208), of which 46.6% belong to the male sex and 53.4% to the female sex. It was found that the majority group communicates in the Spanish language (84.1%), while 12% do so in Spanish and Tzotzil, and 3.4% only in their native language. In regards to religion, most of the parents referred to being Catholic (53.4%), secondly, Seventh-day Adventists (30.8%) and the remaining group, Jehovah's Witnesses, Pentecost and other denominations.

The affiliation to health services reported was mainly to the Popular Insurance with 91.3%, and 1% is affiliated with other unspecified services. 2.9% resorted to private medical assistance, while 4.8% reported not having any type of health affiliation. Regarding the families' economic income, table 1 shows that more than half have incomes lower than 500 Mexican pesos per week and more than a quarter earn between 501 and 1000 Mexican pesos.

Table 1: Weekly average economic income per family

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Income (pesos)	n	%
Less than 200	27	13.0
From 201 to 500	106	51.0
From 501 to 1000	56	26.9
From 1001 10 1500	12	5.8
Over 1500	7	3.4
Total	208	100.0

Note: *n*= frequency, %= percentage.

The reported results on the number of members per family indicated that 75% of these have six members, with an average of 5.47. Regarding the age of the children, 20.2% had 48 months, followed by those of 36 with 14.9%. With the same proportions (10.6%) were those of 24 and 60 months and the rest showed high dispersion (see age group table 2).

Table 2. Number of family members by age

Variable	n	Min	Max	M	DT
Number of family members	208	2	15	5.47	2.34
Children's age by months	207	1	60	33.71	17.32

Note: *n*= sample; Min= minimum; Max= maximum; M= average; DT= standard deviation.

Table 3 shows the results obtained, which respond to the study's objective. It was found that the major risk factors related to ARI were the consumption of non-potable water, followed by the incomplete vaccination scheme and, thirdly, the consumption of non-disinfected food. Regarding the relationship, it was found that the incomplete immunization scheme significantly influences the presence of influenza, while the consumption of non-potable water is significantly related to otitis.

Table 3. Risk factors related to ARI

Factor	ARI	Xi²	p	OR	RI 95% Li	Ls
Non-disinfected food	Influenza	2.246	0.134	2.135	1.846	2.471
Non-disinfected food	Cough	4.481	0.034	3.290	2.673	4.050
Incomplete vaccination scheme	Influenza	11.86	0.001	5.051	1.808	14,111
Non-potable water consumption	Otitis	8.06	0.005	19.600	1.141	336.714

Note: ARI= Acute Respiratory Infections; Xi²= chi square; *p*= significance; OR= Odds ratio; RI= reliability index; Li= lower limit; Ls= upper limit.

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Finally, the relationship between the absence of health education for mothers and/or primary caregivers granted by health institutions and compliance with the vaccination scheme was analyzed. It was found that there is a relationship between them (Xi^2 = 8.077, p = 0.004).

DISCUSSION AND CONCLUSIONS

Although access and health outcomes have improved in recent years, it is still a reality that some preventable diseases, such as ARI, continue to wreak havoc on the child population's health and well-being, mostly in the low socioeconomic status population and that of marginalized areas.

The results of this study, conducted in children under five years old of Pueblo Nuevo Solistahuacán, Chiapas, showed that poor hygienic practices such as the consumption of non-potable water and the incorrect disinfection of food constitute one of the main risk factors associated with the presence of ARI. These results coincide with what was stated by López, *et al*, (2014) and Reyes, Beltrán and Astudillo (2015), who point out that poor hygiene practices contribute to immunodeficiency states and, therefore, increase vulnerability to ARIs. On the other hand, López, *et al* (2016), in a study on family practices in the care of children in a rural area of Bolivia, found that the use of non-potable water can increase the risk of ARI.

The second risk factor for ARI was noncompliance in the vaccination scheme. This result is consistent with that presented by Villena, (2017) on the relationship between vaccines and ARI prevention. In this study, it was established that vaccines have caused a high impact in the reduction of morbidity and mortality in children affected by this health problem. Likewise, ENSANUT 2016, in its half-way report, reported that, in order to prevent the incidence of ARI, interventions for its care were recently strengthened with the universal incorporation of rotavirus vaccination in children under seven months of age from 2008, the insertion of vaccines that prevent low respiratory infections, especially some pneumonias (vaccine against *Haemophilus influenzae* type B and conjugate vaccine of pneumococcal polysaccharides), and some bronchiolitis or interstitial pneumonia (vaccine against influenza) to children under one year (INSP, 2016, p. 27).

In the same tenor, the WHO, (2010) in the document *"Vaccines and Immunization: World Situation"*, estimated that, if by 2015 the coverage of the vaccination scheme, at the time available, would have increased in each country on average up to 90%, the prevention of deaths among children under five could have been reduced by two million; allowing to reduce

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infant mortality by two thirds between 1990 and 2015, as well as the burden of morbidity and disability due to diseases preventable by vaccines and improving the children's health and well-being.

It should be added that as regards the relationship between the absence of health education for mothers and/or primary caregivers granted by health institutions and compliance with the vaccination scheme López, *et al* (2017) found that children's parents and/or caregivers require further education in order to establish best practices in the care of their minor.

The bad practice of hygiene, as well as the noncompliance in the complete immunization scheme in children under five years who live in areas of high marginalization such as the one that characterizes the community studied, make evident the need to strengthen health care strategies primarily in the first level of attention. It is important, therefore, that the nursing professional who has the opportunity to participate in this level of care knows the current reality about the main causes of morbidity and mortality that identify marginalized communities with higher rates of poverty, purpose of proposing real and integrating solution proposals.

RISK FACTORS RELATED TO ACUTE RESPIRATORY INFECTIONS IN CHILDREN UNDER FIVE YEARS OLD IN A POPULATION WITH A HIGH DEGREE OF MARGINALIZATION OF THE STATE OF CHIAPAS

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