HEALTH NEEDS OF NATIVE/INDIGENOUS COMMUNITIES IN THE SAN JOAQUIN VALLEY OF THE UNITED STATES: IMPLICATIONS FOR PUBLIC HEALTH PRACTITIONERS IN PERU AND OTHER PARTS OF THE AMERICAS

NECESIDADES DE SALUD DE LAS COMUNIDADES NATIVAS/INDÍGENAS DEL VALLE CENTRAL DE CALIFORNIA EN LOS ESTADOS UNIDOS: IMPLICACIONES PARA LOS TRABAJADORES DE SALUD PÚBLICA EN PERÚ Y OTRAS PARTES DE LAS AMÉRICAS

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RESUMEN

Objetivos: Analizar las necesidades de salud de las comunidades nativas/indígenas del Valle de San Joaquin en California, Estados Unidos. Discutir las implicaciones que estas necesidades generan para el trabajo de salud pública en el Perú y otras partes de las Américas. Fortalecer los lazos de hermandad académica entre Estados Unidos y Perú para la mejoría de las condiciones de salud de nuestras comunidades indígenas. **Métodos:** Este manuscrito presenta una revisión teórica de artículos publicados durante las últimas dos décadas sobre las condiciones de salud de las comunidades nativas del Valle de San Joaquin en California y las intervenciones de salud pública desarrolladas para el abordaje de dichas necesidades. **Resultados:** Las condiciones de salud de nuestras comunidades nativas/indígenas siguen siendo precarias y relacionadas con un detrimento socio-economico que ha generado enfermedades y condiciones de salud tradicionalmente identificadas en estas comunidades tales como la desnutrición, el parasitismo intestinal, la anemia ferropénica y las enfermedades infecciosas. Además de estas condiciones de salud tradicionalmente encontradas en estas comunidades , un grupo nuevo emergente de condiciones de salud crónicas como la obesidad, la diabetes, y la hipertensión amenazan de manera creciente a nuestras comunidades nativas en las Américas y a nivel global. **Conclusión:** El abordaje de salud pública de las necesidades de las comunidades nativas/ indígenas en las Américas require de colaboración internacional y de trabajo inter-regional. Dicho trabajo debe estar basado en una actitud humilde en la que estemos dispuestos a aprender los unos de los otros y a desarrollar mecanismos cros-regionales como la creación de redes de colaboración internacional y oportunidades de aprendizaje bilateral a traves de teleconferencias y otros medios educativos en las áreas de salud indígena, promoción de la salud, prevención de la enfermedad, educación en salud, y atención primaria en salud.

Palabras clave: Salud indígena; Promoción de la salud; Prevención de la enfermedad; Educación en salud; Atención Primaria en Salud. (fuente: DeCS BIREME)

ABSTRACT

Objective: Analyze the health needs of native/indigenous communities from the San Joaquin Valley in California, United States. Discuss the implications that these needs generate for public health work in Peru and other parts of the Americas. Strengthen the ties of academic brotherhood/sisterhood between the United States and Peru, for the improvement of the health conditions of our indigenous communities. **Methods:** This manuscript presents a theoretical review of articles published during the last two decades about the health conditions of native communities in the San Joaquin California Valley, as well as a review of the public health interventions developed to address such needs. **Results:** The health conditions of our native/indigenous communities continues to be precarious and related with a socio-economic detriment that has generated diseases and health conditions traditionally identified in these communities such as malnutrition, intestinal parasitism, iron-deficiency anemia, and infectious diseases. Along with these traditionally found health conditions, a new group of emergent chronic diseases such as diabetes, hypertension, and obesity increasingly threaten the wellbeing of our native communities in the Americas and around the world. **Conclusion:** The public health response to the needs of the native/indigenous communities in the Americas requires international collaboration and inter-regional work. Such work should be based on a humble attitude in which we are all willing to learn from each other and to develop cross-regional mechanisms such as the creation of international collaboration networks and learning opportunities through teleconferences and other educational means in the areas of indigenous health, health promotion, disease prevention, health education, and primary health care.

Key words: Indigenous Health; Health Promotion; Disease Prevention; Health Education; Primary Health Care. (source: MeSH NLM)

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INTRODUCTION

"We pay our respects to the Indigenous peoples of our countries, and to our Elders, past, present and future, and hope we have honoured their wishes in how this paper has been compiled" [1].

The term "indigenous" has been subject of controversy as it reminds to many, a state of historical mistreatment and cultural injustice. Instead, terms such as native, aboriginal, and first nations, among others have been recently preferred in the literature. In this article, we will use the term native/indigenous to acknowledge the historical value of both denominations.

According to the United Nations (UN) there is no one single definition for indigenous groups due to the diversity within this group. The UN mentioned that a "question of identity" is more important than an issue of "definition" when addressing this group and the value of "self-identification" ought to be the parameter guiding decisions related to this population group. Although no single definition is recognized by the UN, this organization proposed seven general parameters for a modern use of the term indigenous: "(1) Self-identification as indigenous peoples at the individual level and accepted by the community as their member; (2) Historical continuity with pre-colonial and/or pre-settler societies; (3) Strong link to territories and surrounding natural resources; (4) Distinct social, economic or political systems; (5) Distinct language, culture and beliefs; (6) Form non-dominant groups of society; and (7) Resolve to maintain and reproduce their ancestral environments and systems as distinctive peoples and communities"[2].

There are an estimated 370 million indigenous people in the world (5% of the globe's population) from 5,000 groups with various denominations such as Tribal Peoples, Native Peoples, First Peoples, and Indigenous Peoples. They live in 90 countries but about 70% of them are located in the Asian continent and have more than 4,000 distinctive languages[3].

In the United States, the 2010 Census revealed that 5.2 million self-identified as American Indian and Alaska Natives alone or in combination with other racial groups. From them, 2.9 million identified themselves as American Indian and Alaska Native alone. This term refers to "a person having origins in any of the original peoples of North and South America (including Central America) and who maintains tribal affiliation or community attachment"[4]. It is important to note that this cultural group has grown by 39 percent since 2000. They belong to 562 federally recognized tribes, nations, pueblos, and rancherias. Other denominations for this cultural group include Native Americans and Indigenous Americans[4].

California has the largest number of Native Americans in the United States, with approximately 12 percent of the total US native population. There are 109 federally recognized Indian tribes and an estimated 720,000 indigenous people, as identified in the 2010 Census[5].

The Central California Valley, which houses 6.5 million people, is "the region that extends through central California from the Cascade Mountains in the north to the Tehachapi Mountains in the south. Its 450-mile-long stretch is bounded by the Pacific Coast Range to the west and the Sierra Nevadas to the east. Ranging in width from 30 to 60 miles (78 to 155 kilometers), the Central Valley is divided into two smaller valleys: the Sacramento Valley in the north and San Joaquin Valley in the south. Major cities in this region of the state include Fresno, Modesto, Stockton and the state's capital, Sacramento. The Central Valley's fertile soil and extended growing season make it one of the major agricultural regions in the United States"[6].

In the San Joaquin Valley, the Miwok, the Yokut, the Costanoan, the Paiute, the Mono, and the Salinan tribes are predominant Native American groups[7]. The San Joaquin Valley has been a major migration site for Mexican indigenous groups from Oaxaca. Indigenous Oaxacans started to migrate to the United States as part of the Bracero program from 1942 to 1965 and continue in the 1970s and 1980s through the recruitment of agricultural labor. Currently, indigenous Oaxacans are the fastest growing farmworker groups, with an estimated 100,000 to 150,000 living in California[8].

This article will focus on the Oaxacan indigenous groups living in the San Joaquin Valley of California.

The significance of this manuscript is that it will emphasize the importance of studying the health needs of native/indigenous communities in the Americas, discuss exemplary public health practices with these populations, and promote the value of international collaborations as venues to motivate countries to learn from each other and to work together in the development of global health programs.

Manuscript writing is a very important part of advocacy efforts in favor of indigenous communities. It is hoped by the author that exposure to this manuscript will motivate and equip readers with tools to successfully work with indigenous populations.

THEORETICAL CONCEPTS

According to the World Health Organization (WHO),"in both poor and industrialized countries, the health status of indigenous peoples is invariably lower tan that of the overall population"9. Indigenous groups have been labeled by WHO as the world's most marginalized groups, as they experience multiple health disparities shown in factual statements such as being "poorer, less educated, die at a younger age, [and being] much more likely to commit suicide"10. In addition, due to the marginal location of these communities they tend to have limited access to health care, lower quality of educational services, reduced likelihood of having registration at birth, and a decreased chance to have identity documents[11].

Examples of health disparities among native/indigenous groups documented by WHO around the world include rates in Vietnam of up to 60 percent of pregnancies without adequate prenatal care, suicide rates in Canada of up to eleven times higher tan the national average, and three times higher infant mortality rates in Panama[12]. These disparities are also evident in the Americas. More than 400 indigenous groups are estimated to live in Latin America and the Caribbean, which corresponds to approximately 10% of the total population in these regions.

The countries with the highest percent of indigenous population are Bolivia (71%), Guatemala (66%), Peru (47%), and Ecuador (43%)[13]. Due to space limitations in this manuscript, a detailed discussion of demographic data specific to the native/indigenous communities of each country in the Americas is not possible; however, this information can be found in detail in the webpage of the International Workgroup for Indigenous Affairs (IWGA) at http://www.iwgia.org/regions/latin-america/indigenous-peoples-in-latin-america.

The health conditions of our native/indigenous communities in the Americas continues to be precarious and related with a socio-economic detriment that has generated diseases and health conditions traditionally identified in these communities such as malnutrition, intestinal parasitism, iron-deficiency anemia, higher infant mortality rates, higher maternity mortality rates, as well as higher rates of tuberculosis and other infectious diseases[13].

According to Kresge, In the San Joaquin Valley of California, the health and wellbeing of Indigenous Oaxacan communities are affected by marginalization, poverty, lack of health insurance, substandard housing, and increased levels of stress and anxiety. Health conditions affecting this population include alcohol abuse, domestic violence, depression, and increasing rates of teenage pregnancy. In the words of Kresge, "limited Spanish skills and lack of written indigenous languages are some of the most significant barriers to outreach among this population. Other factors limiting access to health and social services include fears associated with immigration status, limited professional interpretation services and limited access to transportation, particularly in more rural and isolated communities"[8]. Native languages used by Oaxacan communities in the San Joaquin Valley include Mixteco, Triqui, Zapoteco, Chanitno, and Amusco[8]. There is a lack of professional interpreters in the United States knowledgeable of these native languages.

Along with the traditionally found health conditions in native/indigenous communities such as infectious diseases, malnourishment, anemias, and parasitic infections, a new group of emergent chronic diseases such as diabetes, hypertension, and obesity increasingly threaten the wellbeing of our native communities in the Americas and around the world. These diseases have been labeled by Montenegro and Stephens as "diseases of acculturation" which are considered to be modern diseases and ailments generated by poverty and a changing lifestyle to fit modern standards of behavior[13]. For instance, WHO documented that in some areas of Australia, indigenous groups have diabetes prevalence rates six-times higher than the general population[12]. Hanley added that "indigenous populations around the world suffer from remarkably high rates of type 2 DM [Diabetes Mellitus] and related complications and risk factors…. [and] among the populations that have the highest reported prevalence rates of type 2 DM and impaired glucose tolerance (IGT), the vast majority are indigenous groups in the Americas or Asia-Pacific region"[14].

A major factor associated with Diabetes and other chronic diseases is poor nutrition, which is a frequently found risk factor associated with overweight, obesity, malnutrition, cardiovascular Disease, type 2 diabetes, some cancers, osteoporosis, and tooth decay in native/indigenous groups[15]. Hanley indicated that the reasons for the increasing rates of diabetes in indigenous groups have not been clearly identified but are likely the result of genetics, changes in lifestyle and psychosocial stress associated with colonization and urbanization. In addition, obesity may also play a major role since it is the strongest risk factor for type 2 DM and is very prevalent in indigenous populations worldwide[14].

Although conditions such as obesity, diabetes, and hypertension have traditionally been associated with indigenous communities in industrialized nations[15],

they are starting to appear in our native/indigenous communities of the Americas.

A study conducted by Odette Zero with Awajún communities in Peru, showed that this indigenous group is undergoing a transition from traditional to western diets, abandonment of physically demanding tasks such as hunting, and adoption of more sedentary and energy-conserving lifestyles, which are increasing their rates of obesity, hence increasing also their risk for diabetes. The results of the study showed that "more than 30% of the Awajun were classified as overweight based on BMI; 42.0% of women were overweight compared to 24.6% of men"[16]. Zero cited Popkin to support her statement that poor communities have an increased risk for obesity because "nutritional deficiencies during fetal growth can trigger 'anatomical, hormonal, and physiological' changes that increase the survival of the fetus by enhancing metabolic efficiency…Thus, children born in "resource-poor" environments will be able to utilize the energy from their diet much more efficiently due to adaptations in-utero, which can lead to increased risk of adiposity later in life"[16]. This statement may partially help explain the shift from low weight to over weight in our indigenous communities.

Creed-Kanashiro et. al. added that risk for obesity and diabetes in Awajún aboriginal groups in Perú may be associated with nutritional and dietary changes generated in part by mineral and petroleum extraction industries, which may have altered the traditional ecosystem of the region. The health situation of Awajuns is compounded by the presence of stunting infant and childhood malnutrition, anemia in women and children, and parasitic infections from Entamoeba coli, Lodamoeba butschil, Anclystoma/ Necartor and Ascaris lumbricoides as documented in a 2004 study[17]. Egeland and Harrison added that diabetes and obesity in aboriginal groups are associated with health disparities related to unhealthy body weights, micronutrient deficiencies, and food insecurity, especially in indigenous groups migrating to urban areas[18].

There are 51 indigenous groups in Peru, with the majority being the highland Quechua, followed by Aymaras, Achuars, Aguaranas, and Ashaninkas. About eight million Peruvians identify themselves as Quechua. The Aymara population is estimated to be 500,000 and is concentrated in the southern highland region near Puno. Lowland indigenous groups include the Achhihguar, Aguaruna, Ashaninka, Huambisa, and Shipibo[19].

A study conducted by Seclen et al. about the prevalence of diabetes and impaired fasting glucose [IFG] in Peru revealed that the national prevalence of diabetes was 7.0 % and 8.4 % in Lima, the capital city. According to this study "diabetes [is] an important public health problem, especially for middle-aged individuals and those with no formal education. 40% of the affected individuals were undiagnosed. The elevated prevalence of IFG shows that nearly a quarter of the adult population of Peru has an increased risk of diabetes"[20]. Indigenous groups in Peru need to be studied for diabetes, hypertension, obesity, and other chronic conditions, to determine their rates as they compare with other aboriginal groups around the world.

DISCUSSION

The World Health Assembly has enacted several resolutions such as WHA 54.16, 48.24, and 47.27 urging countries to devote special attention to indigenous peoples' health and to create programs to promote "the right of indigenous peoples to the enjoyment of the highest attainable standard of Health"[9]. These resolutions are specifically related to the International Decade of the World's Indigenous Peoples and include a work plan to raise awareness about the health needs of these populations, build capacity of professionals in the field of public health to respond to those needs, expose health disparities through data analysis, issue health guidelines for policy makers for national and international frameworks of action, convene partners, and promote action9. Public health practitioners ought to be at the forefront in the development of these initiatives.

The first initiative mentioned in WHO's work plan is to raise awareness about the health needs of indigenous populations. Data on the health of native/ indigenous groups is very scarce and lacks specificity and disaggregation by ethnicity, cultural and tribal affiliation, language and geography[12]. There is certainly a need to assess and quantify pathology associated with chronic conditions such as diabetes, hypertension, and obesity among indigenous communities in the Americas. Global collaborations for research projects with local and international financial support should be strengthened. Initiatives such as the Fulbright Student and Scholar programs provide venues for international collaboration and binational research endeavors. The author of this manuscript participated as a Fulbright Teaching and Research Scholar in Peru from April to August, 2016. In this experience, the author was able to learn effective public health strategies from colleagues in Peru and share with them some of the public health programs developed with native/indigenous communities in

the San Joaquin Valley of Central California.

The second initiative mentioned in WHO's work plan is to "Build Capacity of public health professionals to identify and act upon the specific health needs of indigenous peoples through conducting educational workshops and trainings"[9].

An example of such trainings includes the development of the "Third Teleconference on Indigenous Health" conducted in February, 2017 with participation of scholars, health practitioners, and public health workers from Peru, Colombia, and the United States. These three countries were linked via digital means for the presentation of six experiences related to public health and medical programs with indigenous groups in the participating countries. Presenters were from a multiplicity of disciplines including Nursing, Medicine, Social Work, Sociology, Physical therapy, and Public Health. Topics included: (1) Public Opinion about Food Insecurity and Health among Hispanics and Native Americans in Central Valley of California; (2) Intercultural Experiences in Indigenous Health in the Classrooms in Colombia; (3) Cancer in Indigenous Communities of Peru: An Opportunity for Global Health; (4) Pilot Test for a Model of Indigenous Health Care: The Case of Manuare, La Guajira-Colombia; (5) Intercultural Health and Education with Indigenous Groups in Tolima-Colombia; and (6) Bon Healing in the Himalayas: Indigenous Science of Unobserved and Unmeasured Realities. A total of 280 students, faculty, community members, and staff from four international universities participated in this educational event. Previous teleconferences conducted in 2015 and 2014 also addressed indigenous health issues with the participation of universities from Costa Rica, Colombia, Uganda, and The United States. Presentations in the 2015 and 2014 teleconferences addressed oral health issues, zika, tuberculosis, musculoskeletal conditions, and infectious respiratory diseases. Both teleconferences had an audience of more than 400 participants in each of them and they proved to be innovative and cost-effective educational endeavors.

The third initiative mentioned in WHO's work plan is to "expose Health Disparities by analyzing data through the lens of ethnicity and other variables relevant to indigenous peoples (geographical area, tribal affiliation, gender, language, etc)"[9]. Health disparities in native/indigenous groups have been amply documented. Indigenous communities experience disparities documented in the burden of fatal communicable diseases such as malaria, HIV/AIDS, and Tuberculosis. In addition, unfair marketing practices are prevalent in indigenous regions, as illustrated in the case of soda companies and other sugar-based drinks, which are now building bottling plants and developing new distribution networks in low and middle income countries such as Mexico, which has one of the highest consumption rates of soda in the world and one of the highest rates of childhood and adult obesity and type 2 diabetes. In Mexico alone, soda companies doubled their revenue between 2008 and 2013[21]. This information is particularly relevant when discussing the health needs of indigenous Oaxacan groups coming from Mexico to the San Joaquin Valley in California.

Another health disparity is revealed in the changing dietary patterns of indigenous groups brought up by industrialization and urbanization. Quinoa, for example, a whole grain with a high protein content that provides nine essential aminoacids, has served in the past as the basis for nutrition of many indigenous groups in Peru and Bolivia. Currently, native groups in these regions are abandoning its consumption in favor of refined and processed foods, leaving the surplus of this food for exportation to areas such as California where it is used for the production of energy bars, cereals, and drinks[22].

A comprehensive approach to deal with health disparities among native/indigenous groups can be developed on the basis of the Sustainable Development Goals proposed by the United Nations to be accomplished by the year 2030.

Source: https://sustainabledevelopment.un.org/?menu=1300

Goals 1 (no poverty), 3 (good health and wellbeing for everyone), and 16 (peace, justice, and strong institutions) are particularly relevant to reduce health disparities for native/indigenous communities[23]. Public health practitioners are called to develop health promotion and health education programs related to these three goals in order to maximize the health conditions of our indigenous peoples.

The last initiatives proposed in the work plan of WHO include issuing health guidelines for policy makers for national and international frameworks of action, convene partners, and promote action[9]. On this regard, IWGIA states that integration of native/indigenous groups into the decision-making political process varies from country to country in the Americas. "Countries such as Bolivia has drafted a multi-national Constitution with profound reforms of the system of political participation of indigenous peoples and indigenous representatives have been able to democratically gain access to the national government. Other countries such as Nicaragua have established Autonomous Regions; and Ecuador and Colombia have reformed their Constitutions to include a political-administrative division that includes special areas with certain levels of indigenous autonomy"[10].

Political commitment is crucial to ensure sustainability in indigenous health initiatives. Although most governments have expressed political support to their indigenous health agenda, competing priorities and budget limitations, along with growing patterns of morbidity associated with transmissible diseases, tuberculosis, and HIV/AIDS reduce their likelihood of partnership formation and action development.

A study conducted by Cardenas, Miranda, and Beran titled "Delivery of Type 2 diabetes care in low- and middle-income countries: Lessons from Lima, Peru" revealed three major system-level barriers that have significant effects on access to medications, routine laboratory tests, and follow up care for diabetes. These barriers are: "(1) the availability of information at different healthcare system levels that affects several processes in the healthcare provision; (2) insufficient financial resources; and (3) insufficient human resources trained in diabetes management"[24].

Political treaties from governments to protect the ecosystems of indigenous regions are clear examples of WHO's work plan for national and international frameworks, such as initial commitments from countries in the Amazon River Basin regarding protecting the basin's environmental integrity and reducing its risk of destruction due to deforestation. The Amazon River Basin extends to an approximate area of three million square miles, is a major carbon sink, and is home to multiple native/indigenous groups. Peru's ministry of Environment has been actively involved in the development of strategies to protect the biodiversity of this region such as the creation of international coalitions that promote legislation and research, as well as providing support to the organization of the Amazon Waters International Conference in Lima, Peru, which was an event organized by The Wildlife Conservation Society, a group with a goal of conserving wild places that cover over 50 percent of the world's biodiversity[25].

Expression of political and social commitment can also be seen in the development of networks of global collaboration and intercultural support. Some colleagues from Peru and the United States have joined efforts to create an international institute for the advancement of aboriginal health. Although in its preliminary creation phase, this institute will serve as the venue for the development of joint ventures in research and teaching related to indigenous health. It is recommended to contrast the data available in Peru with data from international organizations such as WHO and The UN to determine the validity and reliability of the information they possess.

In the San Joaquin Valley of California, it is important to support research and follow-up initiatives of the Indigenous Farmworker study, the National Agricultural Workers Survey (NAWS), and the Indigenous Community Survey (ICS). These studies have revealed important emergent trends that can guide public health action, such as increased teenage pregnancy, increasing work-related injuries, and a reduced likelihood among indigenous communities to seek medical attention (62% among indigenous groups and 75% among mestizos)[8,26]. Future follow up efforts will include the creation of an Iberoamerican network for the advancement of native/aboriginal health and the proposal of curricular modules for the training of community lay health workers [also known as "promotores de salud"] who can locally serve native/indigenous groups, as they live in the region and provide continuity of care.

CONCLUSION

According to World Bank figures, 12.76% of the entire American population and approximately 40% of the rural population is indigenous"[10]. These demographic statistics support the value for joint collaborative initiatives to improve the health of our native/ indigenous communities. The public health response to the needs of the native/indigenous communities in the Americas requires international collaboration and inter-regional work. Such work should be based on a humble attitude in which we are all willing to

learn from each other and to develop cross-regional mechanisms in the areas of indigenous health, health promotion, disease prevention, health education, and primary health care.

There is a growing need for the identification of specific health needs of the indigenous communities and the design of effective public health interventions to reduce the risk posed by emerging chronic conditions such as diabetes and hypertension in these populations. Protecting the health of our native/indigenous groups should be the backbone of public health action and one of the reasons for strengthening the ties of academic brotherhood/sisterhood between the United States, Peru, and other countries in the Americas.

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