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Functional Health Pattern Assessment: A Seasonal Migrant Farmworker Community

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A broad-based needs assessment of a migrant farmworker community was conducted using the community functional health pattern tool (Gikow & Kucharski, 1987) and Porter's (1987) factor-isolating theory of population group diagnosis. Data analysis revealed numerous health needs in all 10 functional health patterns and an urgent need for accessible primary prevention programs. A mobile outreach program to the migrant camps was seen as the most effective way to provide education, screening, and health care.

This study attempts a broad-based needs assessment of seasonal migrant farmworkers served by the Outreach Program of a clinic based in a farming community in Western Oregon. Data collection was done using the community functional health pattern tool adapted by Gikow and Kucharski (1987) and based on Gordon's (1982, 1987) functional health pattern assessment typology. Review of relevant literature is presented as it relates to each functional health pattern. A primary and secondary nursing diagnosis is presented based on the data collected for each functional health pattern using Porter's (1987) factor-isolating theory of population group diagnosis.

COMMUNITY OF FOCUS

A seasonal migrant farmworker is a person who crosses geographical boundaries in order to do farmwork for wages (Martin, 1988). Estimates of the number of migrant farmworkers in the United States vary widely due to the transient nature of the population, different definitions of geographic boundaries, and the influx of illegal immigrants (Martin, 1988). For the purpose of this study, seasonal migrant farmworker was defined as those seasonal farmworkers served by a Clinic Outreach Program and housed in temporary shelters within a 30-mile radius of this farming community.

The clinic was started by the Valley Migrant League in 1972 and has now expanded to a 1.6 million dollar comprehensive health center of which 60% is feder-

ally funded. Seasonal migrant farmworkers comprise over 58% of all patients seen at the clinic. The clinic sponsors the only migrant Outreach Program in Oregon.

The Outreach Program is a mobile clinic offering health screening and health education to the area migrants during the main harvesting season (June through September). The program employs two full-time staff members and operates out of the clinic van. Visits are made weekday evenings at the campsites. Health problems encountered are referred to the clinic for follow-up. A health record is initiated for each client according to federally mandated immigration standards. The Outreach Program relies heavily on volunteers to function. The Outreach goal for June–September 1989 was to reach 2,000 of the estimated 30,000–50,000 seasonal migrant farmworkers in the area. This goal was met by the end of September, 1989.

Health screening consists of a brief medical history obtained from the client and includes any past or present health problems and if the client has had a recent purified protein derivative (PPD) test for tuberculosis, a requirement for immigration and work permits. If clients cannot remember if they have had a PPD, or report a positive PPD, they are tested again. Blood pressure is taken, a simple urinalysis done, and a hematocrit obtained for each client. A bag of literature in Spanish is given to each client containing information about sexually transmitted diseases (STDs) acquired immune deficiency syndrome (AIDS), and pesticides. Condoms are distributed and a videotape is shown on AIDS and pesticides.

DATA COLLECTION METHODS

Data were collected through health record reviews, interviews of key informants, interviews of migrant farmworkers, and direct observation in the migrant camps. This was accomplished by volunteering as an Outreach team member.

The month of May 30–June 30, 1989 was selected for health record reviews. Three hundred and fifty-one client records were examined for sex, age, existing health problems, and past health history. Blood pressure, hematocrit, urinalyses, and PPD results were also noted. The charts reviewed encompassed all the clients screened by the Outreach team, including workers living in camps as well as children screened as part of the migrant education program in the schools.

Key informants were interviewed both collectively and separately, with notes taken during each interview. Background on the clinic, the Outreach Program, and characteristics of the client population were obtained primarily from staff members of the clinic and volunteers working with the Outreach team. Those interviewed included the Outreach coordinator, the Director of Nursing Services, the patient advocate, and a physician. Valuable insight on folk medicines and folk beliefs was obtained from an Outreach volunteer who was formerly a seasonal migrant farmworker. The community's police chief was interviewed regarding crime rates and problems among the seasonal migrant farmworkers. The vice president of Pineros y Campesinos Unidos del Noroeste (PCUN; United Treeplanters and Farmworkers of the Northwest) was interviewed about work and living conditions, grower–worker

relationships, income levels, and job-related illnesses and injuries. Interviews were conducted in English and Spanish as appropriate.

The interviews with migrant farmworkers were conducted during health screenings in the camps. Individuals were asked conversationally about their home communities, use of leisure time, perceptions of living and working conditions, state of health, and biggest stressors. Interviews were conducted in Spanish and recorded after the health screening in a log book. Direct observation was done as a member of the Outreach team with impressions and results recorded in a log book after the health screening was completed.

ASSESSMENT TOOL

The assessment tool used was the community functional health patterns tool adapted from Gordon's individual functional health pattern typology (Gikow & Kucharski, 1987). The tool was adjusted slightly to better suit the design of this study. The category of self-perception/self-concept was combined with the category of cognitive/perceptual. The rest/sleep pattern was eliminated as the information obtained was covered under living conditions in the exercise/activity pattern. The concept of respiration was added to the elimination pattern category. A new pattern, environment, was included to cover pollution and environmental hazards.

NURSING DIAGNOSIS TOOL

The factor-isolating theory of population group diagnosis was used to form nursing diagnoses for the community studied (Porter, 1987). This theory identified how nursing diagnoses are formulated based on a database and a review of relevant literature (Porter, 1987). Both a first and second stage nursing diagnosis was made: The first stage determined the group's state of health, whereas the second stage evaluated the degree of match between the group's health need and existing services (Porter, 1987). An example of the complete process is given in Table 1. Second stage diagnoses have direct implications for program planning, a responsibility of community health nurse (CHN) administrators (Porter, 1987).

Using the factor-isolating theory, the seasonal migrant farmworker population was easily identified as a vulnerable population at risk in all 10 functional health pattern areas. This is consistent with a 1979 Educational Commission report based on the findings of an interstate migrant task force's study (Drapo, Patric, & Kemp, 1982, p. 237) which revealed the following:

1. A migrant's life expectancy is 49 years compared to the U.S. national average of 73 years for the general population.
2. The infant mortality rate of migrants is 25% higher than the U.S. national average.

TABLE 1
The Method of Factor Isolating Theory in the Formation of
Nursing Diagnoses for the Seasonal Migrant Farmworker Community

Vulnerable population group at risk/need-service mismatch.

- A. Need-related cue processing.
 1. Cue: High rate of pesticide-related symptoms in migrant field workers.
 2. Need: Pesticide-related symptoms.
 - B. First diagnostic stage.
 1. Hypothesis: Vulnerable population group at risk.
 2. Data: High frequency of upper respiratory tract infections, skin rashes and lesions, and visual disturbance; non-compliance of growers with EPA standards of pesticide use.
 3. Diagnosis: Vulnerable population group at risk in need of instruction on pesticide safety and hazards.
 - C. Second diagnostic stage.
 1. Hypothesis: Questionable degree of need-service match.
 2. Data: EPA standards and pesticide safety and hazards are presented in booklet form to each worker visited by the Outreach team; a video teaching tape on pesticide safety and hazards is shown during each health screening session. The Outreach team is able to reach a maximum of 15% of the area's migrant farmworkers.
 3. Diagnosis: Need-service mismatch related to the inability of the Outreach team to reach more than 15% of the area's migrant farmworkers.
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3. Birth injuries result in increased cases of cerebral palsy and mental retardation.
4. The death rate from influenza and pneumonia are 20% higher than the U.S. national average for the general population.
5. The death rate from tuberculosis and other communicable diseases is 25 times higher than the U.S. national average for the general population.
6. The hospitalization rate of migrants is 50% higher than the U.S. national average.
7. Poor nutrition often results in prenatal and postnatal deaths, anemia, extreme dental problems, and poor mental and physical development of children.

It is clear that this is a community with varied and profound health needs.

FINDINGS

HEALTH-PERCEPTION/HEALTH MANAGEMENT PATTERN

The migrant workers interviewed were reluctant to admit to any past or present health problems. Adjectives used to describe themselves were "healthy," "strong," and "able to work." Health resources existing in this farming community include the clinic, which serves the general and migrant population on an outpatient basis with a sliding scale fee. Clinic hours are Monday-Friday, 9 a.m. to 5 p.m. In the summer there are evening hours, 11 a.m. to 9 p.m., one day a week. Nurses and physicians are not available outside of clinic hours. The clinic's Outreach Program, designed to serve the migrant population, consists of a mobile clinic operated during the summer months by two paid staff members and a group of volunteers. From June to September, 1989, the Outreach Program served 2,000 workers, less than 15% of the projected 30,000-50,000 seasonal migrant farmworkers in the area. The

Outreach Program does health screening and referral to the clinic, as well as pesticide, STD, and AIDS teaching.

The community's perception of health is supported by the literature. Seasonal earnings must see a family through an entire year; "characteristically, a migrant client does not consider a condition an illness unless it becomes so debilitating that he is unable to work" (O'Brien, 1983, p. 897). Clinics designed for migrant use may or may not offer evening and/or weekend hours, and are usually located far from the migrant camps, making transportation a problem (O'Brien, 1983). Hospitals are viewed with anxiety by many migrants as a place where one "goes to die" (O'Brien, 1983, p. 897).

The factor-isolating theory of population group diagnosis was used to formulate nursing diagnoses for this community. The first stage diagnosis is: Vulnerable population group at risk, in need of health screening and health teaching, related to reluctance to seek health care until health problems become critical. The second stage diagnosis is: Need-service mismatch related to incompatible clinic hours, problems with transportation, and the inability of the Outreach Program to reach more than 15% of the migrant population.

NUTRITION-METABOLIC PATTERN

There are no natural resources (e.g., gardens and game) available to the migrant workers living in camps. Food is purchased at area stores, often higher priced convenience markets. Food preferences include traditional Mexican foods such as white rice, corn tortillas, and beans. Soups are frequently prepared and little meat is used. Few fresh fruits and vegetables are eaten. There is a preponderance of sweet and salty prepackaged junk foods, soft drinks, and beer. Most camps have some form of electricity but no heat, fans, or refrigeration. Gas and propane stoves are used for cooking. Income is based on an hourly wage of \$3.35 or less. There is usually a source of tap water at the camps—either well water or city water. Water is often scarce or missing in the fields. Shelter is adequate for warm, mild weather but not adequate for cold or inclement conditions. Twenty-two percent of the workers, and 18% of the children, screened had low hematocrit levels; 7% of the workers, and 15% of the children, had abnormal urinalysis results such as high protein, blood, or nitrates. Four percent of the workers had high blood pressure. A preponderance of dental problems, such as missing or rotted teeth, were noted among workers and children.

The literature supports the findings. Poor nutrition is a prevailing problem among the migrant population and often results in anemia, pre- and postnatal death, extreme dental problems, and poor physical and mental development of children (Drapo et al., 1987). Camps and fields often lack potable drinking water and/or safe food storage facilities (Smith, 1986). Anemia and upper respiratory congestion due to a predominately milk-based diet for 8-36 month olds are commonly seen, as is "baby bottle mouth" syndrome where children's teeth are rotted to

the gum line due to the practice of frequently offering sugary liquids in baby bottles (Schneider, 1986). The diet generally tends to be high in carbohydrates and low in vitamins and protein (O'Brien, 1983). Adults often suffer from hypertension and obesity (Schneider, 1986).

The first stage diagnosis for this community is: Vulnerable population group at risk, in need of improved nutrition and hydration, related to the high incidence of nutritionally related diseases and dehydration. The second stage diagnosis is: Need-service mismatch related to the lack of an ongoing program of nutrition and hydration education in the camps.

ELIMINATION-RESPIRATION PATTERN

Portajohns are used for feces and urine. There is no indoor plumbing or sewage disposal system in the camps or fields, and open barrels are used for garbage disposal. There are many flies and mosquitoes present. Intestinal parasites are common and are often discovered by a low hematocrit result. Living conditions are crowded with a high prevalence of upper respiratory tract infections. Thirty-five percent of the workers and 10% of the children given PPDs tested positive. There was a high pattern of reported isoniazid noncompliance.

The literature reports that unsanitary conditions in the camps and in the fields lead to a high prevalence of tuberculosis, parasitic infections, hepatitis, and typhoid (Smith, 1986). Viral and bacterial gastroenteritis spreads rapidly as living conditions are crowded resulting in epidemics (Schneider, 1986).

The first stage diagnosis for this community is: Vulnerable population group at risk, in need of improved sanitation and waste disposal and instruction in personal hygiene, related to the prevalence of respiratory and gastrointestinal diseases. The second stage diagnosis is: Need-service mismatch related to the absence of sanitary waste disposal and the lack of an ongoing education program of personal hygiene in the camps.

ENVIRONMENTAL PATTERN

There is a high incidence of upper respiratory symptoms, skin rashes, and visual problems. One woman who was screened in the camps and referred to an eye clinic was found to be going blind; she had filed a State Accident Insurance Fund claim due to pesticide exposure 2 years earlier. There is routine noncompliance by growers with the law to post Environmental Protection Agency (EPA) standards of pesticide safety and hazards both in the camps and in the fields. Workers were sometimes sprayed while working in the fields and gloves, and long-sleeved shirts were seldom supplied or used. There was an isolated incident of workers complaining of their drinking water being contaminated with amphetamines by a labor contractor to increase productivity. The labor contractor had been convicted on drug charges the

pervious year following similar complaints. One camp was closed in July following an Outreach visit that discovered a stagnant well. The water was tested and found high in bacteria and Giardia.

The literature supports the aforementioned findings. On-the-job illnesses resulting from exposure to organophosphate and carbamate pesticides include blurred vision, tremors, nausea, vomiting, skin rash, itching, and peeling; severe cases can result in blindness or death (Smith, 1986). Water supplies, when tested for bacteria, have been found to be highly contaminated (O'Brien, 1983). EPA standards that require not entering a field for 24 hr to 28 hr after spraying are routinely ignored and pesticides drift from the fields and contaminate food sources (Smith, 1986).

The first stage diagnosis for this community is: Vulnerable population group at risk, in need of instruction on pesticide safety and hazards, related to the high incidence of pesticide related symptoms. The second stage diagnosis is: Need-service mismatch related to the inability of the Outreach team to reach more than 15% of the area's migrant farmworkers with available pesticide safety instruction.

ACTIVITY-EXERCISE PATTERN

Employment opportunities vary. Last year there was a glut of farmworkers; this year they are in demand as the season started earlier than anticipated. Recreation centers in the community are not used by the migrant population who tend to be isolated in the camps adjacent to the fields. Transport into town is a problem. Living conditions are crowded, crude, substandard, and government standards of housing are routinely not adhered to. Workers are charged \$1.00-\$1.50 per day by labor contractors for their shelter. No phones are available. Most workers speak no English; Spanish is the predominant language. There is usually one or more radios in the camp. Leisure time is usually spent in the camps drinking and playing cards. Prostitutes and illegal drugs are often supplied for a fee by labor contractors. Younger workers state they would prefer spending their leisure time "playing soccer and dancing." Older workers refer to spending time with their families, fishing, and tending a garden back home. Back pain is a frequent complaint heard.

The literature reports that housing is often grossly inadequate with no indoor plumbing, overcrowding, and lack of privacy (O'Brien, 1983). Mexicans and Mexican-American migrant workers tend to be clannish and have little contact with the surrounding community (Schneider, 1986). Adult farmworkers who have been in the fields since childhood frequently suffer from back pain and arthritis due to years of bending and picking (O'Brien, 1983). Migrant farmworkers are often excluded by law, local policy, or practice from needed health, educational, recreational and social services (Smith, 1986).

The first stage diagnosis for this community is: Vulnerable population group at risk, in need of planned therapeutic leisure activities, related to isolation and absence of healthy leisure time pursuits. The second stage diagnosis is: Need-service mismatch related to lack of healthy, planned leisure activities.

COGNITIVE-PERCEPTUAL PATTERN

The average educational level of this population is sixth grade with many migrant workers being illiterate in their own language. Few know English; the predominant language is Spanish. There is a small group of non-English, non-Spanish speakers who are from the Central American highlands. There are migrant educational programs offered during the summer at local schools for migrant children. The migratory lifestyle often means that children leave school early and do not complete the year. Workers voice fondness and longing for their home villages in Mexico, although satisfaction with living and working conditions in the camp was generally expressed. Most regret being away from their families and state they are doing migrant farmwork to support their families who are often still living in Mexico.

The literature states that Spanish speaking people are the fastest growing minority in the U.S. (Rodriguez, 1983). Language deficiencies make it difficult to gain acceptance and equal opportunity, and the lack of education is a significant problem for newly arriving foreign-born Hispanics (Rodriguez, 1983).

The first stage diagnosis is: Vulnerable population group at risk, in need of literacy and English language skills, related to the prevalence of illiteracy and lack of knowledge. The second stage diagnosis is: Need-service mismatch related to the lack of adult English and literacy courses offered in the camps.

ROLE-RELATIONSHIP PATTERN

The Department of Labor is not able to keep up with all the reports of violations in safety standards. When a camp is reported, it may close down only to reopen within a few days. Growers are assessed large fines for violations, but the fines are seldom collected. The labor contractor, who organizes a band of workers and contracts with the grower, is the mediator between the grower and worker. Because growers are often distant, workers are dependent on the powerful labor contractor. The labor contractor often provides shelter and earns a substantial profit by charging the workers rent. Prostitutes and illegal drugs are often provided to the isolated workers for fee by the labor contractor. In this agro-based community, the migrant workers are accepted but not integrated into the community at large. A growing labor union exists opposed by growers and labor contractors; 2,200 of the estimated 30,000-60,000 workers are members. Workers are often ignorant of their own oppressed condition and fearful of antagonizing the growers and losing their jobs. The worker-labor contractor relationship was often described by key informants as a master-slave relationship.

The literature supports these findings. The labor contractor is often unscrupulous, and in 1983 several labor contractors were convicted on slavery charges in North Carolina (Smith, 1986). Wages and working conditions need improvement. Labor unions are attempting to do so but, as yet, exist in few states.

The first stage nursing diagnosis is: Vulnerable population group at risk, in need

of advocates, related to oppressed status and lack of knowledge. The second stage diagnosis is: Need-service match related to active presence of a farmworkers' labor union.

SEXUALITY-REPRODUCTIVE PATTERN

In the camps, 85% of the workers were men. There is a growing influx of women and children, due to recent changes in immigration laws. Prenatal care is offered at the clinic. Many migrant women have no prenatal care or enter the program in late pregnancy. All key informants identify STDs, prostitution, drug abuse, and AIDS as a growing and serious problem.

Although STDs, AIDS, and the hazards of drug abuse dominate the popular media and much health literature, nothing was found addressing these problems in relation to the migrant farmworker population. Mexican and Mexican-American women tend to marry and/or bear children beginning at ages 13-17. They are often anemic with little or no prenatal care; their newborns are often anemic and underweight (Schneider, 1986). Spontaneous abortions are common among pregnant women who actively work in the fields (O'Brien, 1983). Pesticide exposure can lead to decreased spermatogenesis in men, teratogenic effects on the fetus and contamination of breast milk (Smith, 1986). There is widespread lack of knowledge of birth control measures (Rodriguez, 1983).

The first stage diagnoses for this population are: (a) vulnerable population group at risk, in need of STD (including AIDS) and drug abuse prevention and education, related to the growing incidence of STD and drug abuse by the migrant farmworker population, and (b) vulnerable population group at risk, in need of birth control teaching and prenatal care, related to lack of understanding about birth control and pregnancy. The second stage diagnoses are: (a) need-service mismatch related to the inability of the outreach team to reach more than 15% of the migrant workers with prepared educational program, and (b) need-service mismatch related to lack of Outreach program of prenatal and birth control screening and education.

COPING-STRESS TOLERANCE PATTERN

Drug abuse, especially cocaine and crack use, was uniformly cited by all key informants as a rapidly growing problem. Most crime in the camps is related to drug abuse and prostitution. The workers spend long hours in the fields and most are separated from their homes and families. Leisure activity includes heavy alcohol intake and alcoholism is a recurrent problem. Workers report that the hardest aspect of their job is being away from home and family.

The literature reports that alcohol, drug abuse, and family violence are not uncommon (Smith, 1986). Stresses include threats of calling immigration, often used to keep workers compliant and noncomplaining (Smith, 1986). In the Mexican and

Mexican-American culture, the family forms the support system and there are strong kinship bonds (Rodriguez, 1983). Average annual income is \$6,000–\$7,000 for a family of seven (Schneider, 1986). Many health problems can be directly related to poverty, alienation, and continued seasonal mobility (O'Brien, 1983).

The first stage diagnosis for this community is: vulnerable population group at risk, in need of drug and alcohol abuse education and rehabilitation, related to growing problems with substance abuse. The second stage diagnoses are: need-service mismatch related to the lack of a drug and alcohol abuse education program in the camps and need-service match related to alcohol rehabilitation offered by the clinic.

VALUE-BELIEF PATTERN

The migrant workers visited were predominantly Catholic. They were noncomplaining and passive. The ability to work and provide for their own and their families' needs was voiced as an important value. Many workers came from remote rural areas of Mexico where folk remedies and folk beliefs are an important part of life. Herbs are commonly used to treat many symptoms, often with success. When folk remedies do not work, traditional medical help may be sought.

The literature supports the data obtained. In rural areas of Mexico there is a strong belief in folk illnesses, such as the evil eye, that can only be treated by traditional folk methods (Rodriguez, 1983). Health and illness are often viewed as matters over which God has influence—medical interpretation may be viewed as interference with the will of God (Rodriguez, 1983).

The first stage diagnosis is: vulnerable population group at risk, in need of understanding and acceptance of own cultural values and beliefs, related to the importance of those beliefs to acceptable health-care delivery. The second stage diagnosis is: need service mismatch related to the lack of inservice programs on transcultural caring and lack of networking with community folk healers.

CONCLUSION

Based on the second stage diagnoses, there are many implications for program planning. It is obvious that Outreach to the migrant camps is the most effective way of offering educational and health screening to the migrant population. Primary prevention programs are greatly lacking and are urgently needed in all 10 functional health pattern areas. Primary health care, however, is not yet a high priority in the U.S. with the majority of U.S. health care dollars spent on high-tech intervention (Huey, 1988). Acceptance of foreign-born migrant farmworkers is still pending, and the abysmal conditions and health needs of the migrant workers have changed little in the past 30 years (Martin, 1988).

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