

ORIGINAL RESEARCH

Nursing students' experiences of health screening in rural areas of southern Turkey: a qualitative study

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ABSTRACT:

Introduction: Individuals in rural areas live with healthcare disadvantages relating to, for example, access to health institutions, necessary treatments, and healthcare professionals during medical emergencies. The aim of this study was to explore the experiences, beliefs and attitudes of nursing students to identify advantages and disadvantages of health screening in several rural areas in rural Turkey.

Methods: Health screening practices with senior nursing students were conducted in six rural areas. A qualitative descriptive study was performed using thematic analysis of open-ended responses to a web-based survey of 34 students aged 18 years and over. This study was conducted in March and April 2020.

Results: The practices of nursing students in rural areas included measuring vital signs, body mass index calculation, blood glucose and cholesterol measurement, depression screening, cancer screening and health education. Students undertook various health screening practices in rural health care including colorectal cancer screening, evaluation of scales used in diabetes and depression risk. Characteristics referred to by student nurses as part of public health nursing roles were protector, advocate, supporter, caregiver, coordinator, collaborator, educator, counsellor, researcher, therapist, case manager, leader and care provider. The main themes generated related to student emotions, feedback of screening participants to nursing students, positive nursing

characteristics, advantages and disadvantages of doing health screening in rural areas, benefits of working with health professionals to nursing student education, and feedback for nursing educators and researchers.

Conclusion: Participants recognised their emotions, and the
Keywords:

health screening, primary health, qualitative research, rural nursing, Turkey.

benefits and advantages of health screening practices, and disadvantages were determined across the themes. Health services should be planned by taking these experiences into account in health screenings to be carried out in rural areas.

FULL ARTICLE:

Introduction

Rural areas can be defined as areas where the population density is low, economic life is mostly based on agriculture, and social facilities such as education, health and communication are not sufficiently developed^{1,2}. Rural areas are limited in terms of health care and other sectors. Some rural areas have primary healthcare institutions (primary health care or healthcare centres) and some do not have any health institutions. Individuals living in rural areas are at a disadvantage due to reasons such as access to health institutions, getting the necessary treatments and health services on time, and reaching a healthcare professional in an emergency³⁻⁵.

Rural nursing refers to nursing in sparsely populated and underserved geographic areas. Patients to whom nurses provide health care have limited access to health care because they live in remote areas. Because rural nurses work in small, less complex healthcare institutions, they must be able to think critically and care for patients of all ages and all kinds of conditions. This is in contrast to large metropolitan hospitals, where nurses may specialise in areas such as emergency medicine, paediatrics, cardiology, telemetry and surgery^{6,7}.

Nurses working in rural hospitals or clinics are required to be skilled in all areas of nursing. They are crucial, treating patients with diverse and sometimes complex conditions. Rural nurses are generalists who provide any needed care, such as dispensing medication, managing chronic disease and preparing patients with injuries or acute health problems for transfer to larger healthcare institutions. Therefore, rural nurses have a great deal of autonomy^{6,8,9}.

Problems related to health care that are experienced in rural areas include lack of access to quality health services, more residents without health insurance, healthcare worker shortages (twice as many in rural areas worldwide as in urban areas), insufficient employment opportunities, lack of water, sanitation and other infrastructure, and transportation problems^{7,8,10}.

People living in some rural areas must travel long distances for specialist and emergency care. Rurality also increases the risk of death due to exposure to certain environmental hazards, such as chemicals used for farming. Rural residents tend to have higher rates of certain substance use, such as cigarette smoking and opioid and methamphetamine misuse, smoking, high blood pressure and obesity. In rural areas there is less physical activity and less seatbelt use. In addition, rural residents are more likely to

have higher poverty rates, less access to health services and less health insurance than those in urban areas. All these factors can lead to negative health problems in individuals in rural areas^{10,11}.

Sustaining healthy rural communities depends on the appropriate preparation and provision of a rural health workforce that includes doctors, nurses and other health professionals who are well educated, well trained, and have experiences that expose and prepare them for the countryside¹². The training of health professionals who will work in rural areas should include rural rotations or curricula, involving rural interprofessional education experiences, residence programs and fellowships especially designed to train doctors and nurses for rural practice; continuing and professional training opportunities for rural healthcare workers; and incorporating technology into education through activities such as simulation and telehealth applications¹²⁻¹⁴.

A study evaluating rural practices in nursing education in Canada states that practice planning is important in nursing education, which is built on a multifaceted partnership with the regional (rural) health authority, and that specialist nurses working in rural areas make a great contribution to the professional development of students. It also indicated that nursing education partnerships with nurse leaders, specialist nurses and other healthcare disciplines that have academics within the nursing school provide the opportunity to create research programs that contribute to the health and wellbeing of rural populations¹⁴. In a study evaluating the rural rotation program applied to nursing students (NSs), the nursing school collaborated with key stakeholders such as nursing mentors and community leaders, the students took part in rural clinics and, as a result of the study, the program was said to be feasible and acceptable¹³. In another study, the most important factors affecting the learning of NSs in a rural clinical setting were the environment itself, the complex relationships inherent in living and working in a rural society, and the capacity to connect theory to practice¹⁵.

Health screenings are essential for NSs in terms of understanding the lifestyles of individuals living in rural areas, identifying risk factors that threaten their health, raising awareness of these individuals, and knowing and applying the interventions to prevent diseases before they occur¹⁶. It is necessary to determine the experiences of students performing health screening in rural areas, to reveal the experiences they have gained in health screening practices, to determine the perceptions and the meanings of students regarding health screening and rural areas¹⁷. Determining these experiences can guide health professionals working in rural

areas, researchers, and nursing educators and students who will conduct screening in the future.

This study was conducted with the idea that students' visits to rural areas and their experiences in health screenings are valuable, and that this study will be useful in terms of providing the future development of health screenings and guiding educators. With these aspects, it can make significant contributions to both scientific literature and practice. The objective of this study was to determine the experiences of the NSs performing health screening for adults in rural areas.

Methods

Design and sample

This study applied a descriptive qualitative design. Consolidated criteria for reporting qualitative research (COREQ) checklist recommended by Tong et al was used in the study¹⁸. The research question was 'How do NSs define and interpret their experiences of health screening in rural areas?'

Health screenings were conducted with 120 NSs. This qualitative study with a purposive sampling method was carried out with 34 nursing senior students, among 120 students aged 18 years and over, who agreed to participate. The purposive sampling approach was adopted to provide the maximum information available for the research question according to the purpose of the research. Purposive recruitment aimed to obtain diversity in terms of gender, relationships with individuals living in rural areas,

experiences and different rural areas.

Setting

Six rural areas in Korkuteli, in the district of Antalya city, Turkey, were visited for health screening in November 2019. Health screenings in rural areas were conducted by fourth grade students taking public health nursing lessons under the supervision of health professionals and academic staff as a group. Each group of 30 NSs visited a rural area and each student conducted a health screening such as obesity, cancer and cardiovascular disease risk screening. Before NSs went to the rural areas for health screening, guidelines were explained and given to them in theoretical lessons, and a simulation application was made in the laboratory. Adult individuals were trained at every stage of health screening in rural areas. Table 1 presents the practices of students in health screening.

The distances of six rural areas to the city centre are 60–85 km. In many rural areas, there is no family health centre where preventive health services such as vaccination, pregnancy examination and maternal child health care are provided. There are family health centres in a few rural areas where the population is higher. Nearby rural areas receive health care from this family health centre. However, secondary or tertiary healthcare institutions providing internal and surgical services are not available in rural areas. Citizens who want to reach these institutions must go to the city or district centre. They must drive at least 20 km to the nearest Korkuteli secondary healthcare institution.

Table 1: Health screenings practices conducted by nursing students in six rural areas of Turkey

Screening	Practices and advice	Referrals
Obesity screening	Height, weight and waist circumference measured for obesity screening; body mass index was calculated.	Individuals determined to be obese were directed to a dietician in the district.
Hypertension and diabetes mellitus screening	Blood pressure of individuals was measured in hypertension screening. Fasting or postprandial blood glucose was measured with a glucometer in diabetes screening.	People who were found to have high blood pressure and blood sugar were referred to family physicians in the district.
Diabetes mellitus screening	Body mass index, age, waist circumference, exercise status, vegetable and fruit consumption, drug use for hypertension, history of hyperglycaemia, genetic factors (presence of diabetes mellitus) were questioned with FINDRISK to determine the risk of diabetes.	Those with medium and high diabetes risk were referred to the endocrinology outpatient clinic in the district.
Cardiovascular disease risk screening	To determine the risk of cardiovascular disease, the presence of chronic disease, smoking and blood pressure values were taken into account.	Individuals with high cardiovascular risk were referred to their family doctor or cardiology.
Depression screening	The presence of depressive symptoms in adults in rural areas was questioned.	Individuals with positive depressive symptom screening were referred to the psychiatry outpatient clinic.
Cancer screening	Cooperation was made with District Health Directorates serving rural areas for cancer screening. Cervical and colorectal cancer screening was carried out in the mobile cancer screening vehicles. Trainings on breast, cervical and colorectal cancer screening were provided. For breast cancer, women were trained on breast self-examination. Information was given about cervical cancer and the pap smear test was performed in the cancer screening vehicles for the women who accepted. Men and women were trained about colorectal cancer screening. And those who agree to have the immunochemical fecal occult blood test were performed this test. In all these processes, cancer screening brochures prepared by the Ministry of Health were given to individuals in addition to the trainings.	For breast cancer, women were directed to mammography. Those who tested positive in the faecal occult blood test were referred to the general surgery or gastroenterology clinic.

Measures

Health screenings were conducted on individuals aged over

40 years living in rural areas. After these screenings within the scope of the public health nursing lessons were completed, study data were collected between March and April 2020. The open-

ended research questions were prepared in line with the literature, and the opinions of two experts who were not in the research team were sought in relation to the questions^{15,16,19}. Moreover, in order to determine the understandability of the questions before the study, the reports of two students who were not included in the study sample were examined, and the questions were finalised by taking the students' opinions about the questions. Student reports were provided online, with open-ended questions structured due to the pandemic process. Research data from these reports were analysed using a thematic approach. The themes that emerged after the analysis were obtained through the following open-ended questions directed to the students:

- What health practices did you learn or do in rural adult health screenings?
- Can you share the emotions you felt while doing rural adult health screenings?
- How was the feedback of adults/elderly people participating in the screening about your actions?
- Do you think rural health screenings are beneficial for you and adults/elderly people? Can you explain?
- What do you think might be the advantages and disadvantages of rural areas in terms of health screenings compared to urban areas?
- Did you encounter any difficulties while performing health screenings in rural areas? Can you explain?
- What kind of contribution did working with your peers, teachers and health professionals (nurses with responsibility for the cancer screening tool) make during your rural health screenings?
- What roles of public health nursing would you fulfil with health screenings in rural areas?
- What are your suggestions to NSs and nursing educators for future rural screenings?

Data analysis

The web-based survey reports obtained with open-ended questions were coded independently by two authors. Thematic analysis was used to explore the relationships between the themes. This involved (i) reading the reports line by line and identifying initial ideas, (ii) generating initial codes across the entire dataset, (iii) identifying the relationships between the codes and bringing them together to form themes, (iv) reviewing the themes to ensure that they were relevant to the codes created, (v) reviewing of themes and subthemes by other experts, and (vi) reporting themes using quotations as examples.

The major themes and subthemes were evaluated by two experts independent of the research, and kappa analysis was performed. It was determined that Cohen's kappa coefficient was 0.93, and this value shows that internal consistency is a perfect fit²⁰.

Reliability, transferability and confirmability criteria were used for the reliability and precision of the findings. Reports submitted by

NSs online were stored in Google forms for reliability. Transcripts were audited by members of the research team and other experts to avoid potential bias. Kappa analysis for the consistency of the themes evaluated by experts who were not in the research team confirmed the findings. The online report due to the pandemic allowed the participants to write freely and share comprehensive descriptions of their experiences.

In-depth explanations are included in subthemes to ensure the reliability and transferability of the findings. Moreover, students practising in different rural areas communicated with individuals from all age groups. The experiences of students with backgrounds such as Arabic, Persian, Caucasian, Kurdish, Balkan and Laz are reflected in this study.

The research questions directed to the students were prepared in line with the literature and the reviews of two experts were taken for validity and reliability. In addition, a pilot study was conducted with two students who were not included in the study.

Ethics approval

Permission was obtained from Akdeniz University Clinical Research Ethics Committee to conduct the study with students (70904504/110, 18 February 2020). In addition, an institutional permit was obtained from Akdeniz University Faculty of Nursing. The objective of the study was explained to the students, and their informed consents were obtained online.

Results

In this study, 27 of the students participating in the study were women and seven were men. The health screening practices of NSs in rural areas included measuring vital signs, calculating body mass index, blood glucose and cholesterol measurement, depression screening, cancer screening and health education. Students within the scope of public health nursing practices gained experience in health screening practices in rural areas including colorectal cancer screening, evaluation of scales used in diabetes and depression risk. Characteristics referred to by NSs as part of public health nursing roles were protector, supporter, advocate, coordinator, collaborator, educator, researcher, counsellor, caregiver, therapist, case manager, leader and care provider (Table 2). In this study, seven main themes were generated: student emotions, screening participant feedback to NSs, positive nursing characteristics, advantages and disadvantages of doing health screening in rural areas, contribution of working with health professionals to NS education, and feedback for nursing educators and researchers (Table 3).

Table 2: Nursing practices of students who experienced health screening in rural areas, and newly learned practices and public health nursing roles

Nursing practices in health screenings for adults in rural areas according to nursing students	Perspectives/new experiences	Characteristics of public health nursing roles
Measuring vital signs, body mass index calculation, blood glucose measurement, depression screening, breast, cervical and colorectal cancer screening and group and health education (on prevention of these cancers, healthy lifestyle counseling, walking, nutrition, medication use and chronic diseases, etc.)	Rural life, colorectal cancer screening, evaluation of scales used for diabetes and depression risk	Protector, advocate, supporter, caregiver, coordinator, collaborator, educator, counsellor, researcher, therapist, case manager, leader, care provider

Table 3: Main themes, subthemes and examples of quotations of nursing student experiences during screening in six rural areas of Turkey

Themes and subthemes	Illustrative quotes
Theme 1: Student emotions	
Happiness and satisfaction	'I guess completely different emotions can only be experienced. I understood how necessary these practices are for the public ..., and our practices are important to them. I am very pleased that people embraced the whole team and hosted us like guests. It was a day that I will never forget.' (NS 7) 'The fact that the individuals who came there were worried about whether I was sick ... It made me happy to be doing something to raise awareness and to activate it. It was invaluable that women didn't want to have a pap smear first, but after explaining ... they got tested.' (NS 23)
Job satisfaction	'It is very meaningful for me to inform and to raise awareness people listening to you with full attention and curiosity. Touching people's lives gives me happiness while providing job satisfaction.' (NS 4) 'I had the chance to follow up-to-date nursing practices and my professional nursing knowledge was updated. It provides job satisfaction.' (NS 5)
Peaceful	'It is very pleasant to be able to help people and benefit them.' (NS 9) 'I felt comfortable, peaceful, healthy, positive and good because I could help people.' (NS 14)
Exciting	'Seeing that I can be useful to people has made me excited. Their excitement when they saw us passed on to us.' (NS 10) 'It is a bit anxious and excited when many people look at what you are doing. There is a maximum of 4 people in a room in the hospital. There are at least 50 people out there and this was a positive stimulus for me that really affected the work done.' (NS 26)
Successful and proud	'I am proud of myself because it helps individuals far from healthcare services.' (NS 6) 'In my profession, there was a field I could choose. I would like to work in rural areas. I was proud of my job again, I felt I had accomplished something.' (NS 15)
Self-confident	'We felt a professional stance, a self-confidence.' (NS 18) 'Talking and helping people in the village boosted my self-esteem.' (NS 32)
Love for the nursing profession	'I felt myself as a healthcare worker at that moment, the attitude of people to me made me love my profession more.' (NS 18)
Theme 2: Screening participant feedback to nursing students	
Happiness	'Individuals prepared a variety of dishes at their homes and brought them to us. They brought a variety of fruit and tea on him. They were very happy.' (NS 6) 'They had smiles on their faces and were constantly thanking.' (NS 23)
Gratitude	'Their eyes were shining and they were looking grateful. Almost everyone said God bless.' (NS 16)
Theme 3: Positive nursing characteristics	
Professionalism	'In the health screenings we have done for adult individuals, I realized that I was close to being a professional before taking a full step into professional life.' (NS 12) 'We provided a quality nursing practice by conducting more professional health screenings as a group.' (NS 17)
Preventive and awareness raising	'As a result of screening a person and explaining its importance and informing that person, if that person tells to another person, neighbor, or relative, he/she says to him/her ... Thus, many people are reached. The number of people with early diagnosis increases.' (NS 4) 'They learned about their health, regular and balanced diet, the importance of moving, what some symptoms mean and when they should apply to the health institution. They became aware of the risks, if any, about their health condition. Individuals at risk were identified. We directed them to the family health center or hospital.' (NS 21) 'In rural areas, ... those who cannot go to the hospital often or who do not pay attention to their health were made aware.' (NS 26)
Supportive-helpful approach	'Among the individuals we screened, there were those who never went to health check, I think they are beneficial.' (NS 21) 'Health screenings are very useful in my opinion, most people are not even aware of the existence of such health screenings ... I think these screenings are very beneficial both for public health and for maintaining continuity with a healthier generation. I think it supports their health.' (NS 28) 'I think it is very useful to have a health screening. If we hadn't gone to screening, maybe he wouldn't have done it himself at all, or he wouldn't have cared because he didn't know the importance.' (NS 29)
Educational-instructive	'I think we have improved because we have the chance to put what we have learned into practice through health screenings. Screening was educational for us.' (NS 1) 'We learned the lifestyle of the individuals living in the rural area. I learned that they consume fruit a lot in the evenings because of producing fruit and vegetables. For this reason, obesity and diabetes rates are high and these individuals were not aware of the situation. For example, an aunt said with her husband that they consume 8-9 apples and pears in the evening. It was an instructive screening for us. It was possible to consolidate a lot of my theories.' (NS 7)
Experience gaining	'This screening provided field work experience.' (NS 1) 'Seeing the village environment was useful in terms of getting to know and experiencing the environments where I could work in the future.' (NS 11) 'A great experience before going to professional life.' (NS 12)
Communicator	'I had the opportunity to collaborate effectively on the field. This allowed me to improve my nursing and communication skills.' (NS 10) 'Working one-on-one with people in the community has further improved my human relationships.' (NS 27) 'First, it strengthens our communication. How can we explain in a simple language, how can we be useful, we gain skills.' (NS 30)
Team collaboration	'It was a good team work, we shared tasks among our friends, everyone's task was different, so it progressed quickly.' (NS 5) 'I tasted the team spirit.' (NS 6) 'We went to a different segment outside the hospital, and we united for the health of the people and we benefited the society as a team.' (NS 26)
Coordinator/planner	'We had a friend who put the peasants in line and guided them. There was no confusion when everyone did their job. We completed the health screening in a coordinated manner by directing people at risk to the hospital.' (NS 15) 'We used our time more effectively and directed adult individuals to health institutions more effectively.' (NS 28) 'Our teachers made a distribution of tasks before they went to the countryside. Everything was planned. We also made a health screening by planning the work we will do.' (NS 34)
Creativity	'When measuring height, I had a hard time finding a flat floor and scaling it. But we thought I was a nurse and used my creativity and mind, we taped a tape measure on a flat wall and measured it.' (NS 34)
Theme 4: Advantages of health screening in rural areas	
Facilitating	'Access to health centers can be hampered due to relative difficulties. In these difficulties, materiality and transportation come to the fore. It made it easier for the individuals living there. Also, I think they ask questions more comfortably.' (NS 2) 'Taking the service to the people's feet causes people to break the laziness and take action for screening. Taking this service to individuals who cannot go to institutions such as Family Health Center, Cancer Early Diagnosis and Education Center enables people to access screening facilities more easily and access to health services becomes easier.' (NS 19)
Saving time	'Many people who cannot leave their jobs and go to the center can come and have their screening done. People didn't waste time.' (NS 5)
Reaching many people and raising awareness	'Screening in rural areas was advantageous in terms of reaching many people who did not participate in health screening. They also became conscious [aware].' (NS 5) 'The advantage of health screening in rural areas was reaching more people, screening and making rural people feel valuable.' (NS 30)
Be able to practice public health nursing roles	'We had the chance to fulfill the roles of public health nursing.' (NS 3)
Nursing practice	'The advantage of health screening in rural areas for students was the chance to practice more as students.' (NS 22)
Theme 5: Disadvantages of health screening in rural areas	
Screening area conditions	'The disadvantage is equipment limitations. The mobile vehicle does not have enough equipment.' (NS 7) 'It was troublesome in terms of the area we were screening, it was cold and we had to do it in an open area.' (NS 21) 'Some women were embarrassed when answering the questions, as women and men attended the screening in the same environment.' (NS 23)
Time	'The duration of the screening is short (one day). There is a problem of not being able to manage time very well.' (NS 4)

	'A certain period of time passed for our teachers and us to reach the village with a mobile vehicle. Maybe the time-consuming process may be our disadvantage.' (NS 28)
Food for students	'Food problem was a disadvantage for us.' (NS 22)
Cost and organisation	'Screening in rural areas is both costly and time consuming and requires preparation and organization.' (NS 19)
Theme 6: Benefits of working with health professionals to nursing student education	
Development and experience in nursing practice	'It enabled us to gain experience and to close our shortcomings. We learned how to prepare the environment, organize and manage individuals and events by conducting a health screening.' (NS 7) 'Working with nurses and midwives who come with the cancer screening tool, we learned the processes of cancer screening and reporting of results from them. These processes enabled our development.' (NS 11)
Team dynamics and harmony	'Working with our lecturer and health professionals made us understand the importance of team dynamics and harmony.' (NS 20)
Theme 7: Feedback for nursing educators and researchers	
Screening time and environment	'Can be done on a warmer date and in a more sheltered area.' (NS 1) 'Considering the seasonal conditions, a more suitable environment for screening can be set beforehand.' (NS 21)
Number of screenings/ number of teams	'More rural areas should be screened.' (NS 2) 'I think it would be a more productive work if the number of teams to do the screenings is increased.' (NS 4)
Organisation in screening	'Have a meal organization.' (NS 18) 'I think the sharing of tasks should be clearer. Students should be informed more clearly, time management is very important.' (NS 20)

NS, nursing student.

Theme 1: Student emotions

NSs reporting experiencing some positive emotions during health screenings in rural areas. Subthemes included (i) happiness and satisfaction, (ii) job satisfaction, (iii) peaceful, (iv) exciting, (v) successful and proud, (vi) self-confident and (vii) love for the nursing profession. Many students stated that doing health screening in rural areas gave them a lot of happiness and they were very satisfied with their work. One student shared that she/he experienced 'completely different emotions' (NS 7) and the other student stated that it was an unforgettable moment (NS 23). Information on the emotions of NSs included 'updating professional nursing knowledge' (NS 5), 'helping people is very comforting' (NS 9), 'their excitement is passed on to us' (NS 10), and 'caring for individuals in the crowd is a positive stimulus' (NS 26). 'Proud of myself' (NS 6), 'boosting self-esteem' (NS 32), 'improving love for the profession with working in rural areas' (NS 18) were other emotions. Table 3 shows main themes, subthemes and illustrative quotes.

Theme 2: Screening participant feedback to nursing students

According to the NSs who went to the rural areas for health screening, the emotions of the adults living there were positive. Subthemes emerged, including (i) happiness and (ii) gratitude. One NS expressed that screening participants prepare meals and serve fruit (NS 6). Another student stated that almost all of the individuals living in rural areas say 'God bless you' (NS 23) (Table 3).

Theme 3: Positive nursing characteristics

The characteristics that are thought to be specific to the professional practice role of nurses were determined in line with the students' opinions. Subordinate themes included (i) professionalism, (ii) preventive and awareness raising, (iii) supportive-helpful approach, (iv) educational-instructive, (v) experience gaining, (vi) communicator, (vii) team collaboration, (viii) coordinator/planner and (ix) creativity. The participants stated that a quality health service is provided (NS 17), a large number of people can be reached and their awareness increased (NS 4), it is a very beneficial practice for a healthy future (NS 28), they had the

chance to put theory into practice (NS 1) and they observed/experienced village life (NS 11). Additionally, NSs noted that their communication skills were strengthened (NS 10), they experienced team spirit (NS 6), they performed health screening in coordination and by using time effectively (NS 15, NS 28), and rural areas enabled to activate their creativity (NS 34) (Table 3).

Theme 4: Advantages of health screening in rural areas

Participants identified factors that demonstrate the advantages of providing health care in rural areas. Subthemes included (i) facilitating, (ii) saving time, (iii) reaching many people and raising awareness, (iv) be able to practice public health nursing roles, (v) nursing practice. One student discussed that economic problems and transportation restrict access to health, health screening in rural areas facilitates access to health services (NS 2). Another student noted that people in rural areas do not want to quit their jobs and go to health institutions and it was reached many people who did not have health screening before (NS 5). Participants stated that they had the chance to practise public health nursing roles and practice a lot of nursing (NS 3, NS 22) (Table 3).

Theme 5: Disadvantages of health screening in rural areas

NSs referred to some factors that emerged as disadvantages of health care in rural areas. Subthemes included (i) screening area conditions, (ii) time, (iii) food for students, and (iv) cost and organization. The student participants stated the disadvantages of performing a health screening in rural areas as a shortage of materials (NS 7), lack of closed area for health screening (NS 21), planning the screening for only one day (NS 4), time delay for transportation time of health professionals (NS 28), lunch problem (NS 22), and not easy organization processes (NS 19) (Table 3).

Theme 6: Benefits of working with health professionals to nursing student education

Participants stated that transferring the experiences of health professionals to them is one of the most important contributions. Subthemes emerged, including (i) development and experience in nursing practice, and (ii) team dynamics and harmony. One student stated that they learned about the organisation of the environment to be screened, the team performing the screening,

and the people participating in the screening (NS 7). One participant, whose comment was mentioned by many students, emphasized the importance of team dynamics and harmony (NS 20) (Table 3).

Theme 7: Feedback for nursing educators and researchers

Participants' feedback to educators and researchers provides suggestions for future rural studies/nursing practices. Subthemes included (i) screening time and environment, (ii) number of screenings/teams, and (iii) organisation in screening. The students stated that the screenings should be at a time of year when the weather is better and the scanning area should be a more sheltered area (NS 1), lunch should be organised (NS 18), and more rural areas should be visited (NS 2) (Table 3).

Discussion

Individuals living in rural areas are disadvantaged in accessing health services, and health screenings for these individuals may contribute to early diagnosis and preventive health services. The experiences of the NSs in this field can be a guide for both health professionals and health educators. The authors believe that health screening in rural areas can contribute to the development of nursing practices, nursing education and the expansion of the perspective that includes the life of the rural community.

Providing preventive health services in rural areas is a very important public health service. Nursing students have screened for chronic diseases such as hypertension, diabetes mellitus, cardiovascular disease, obesity, cancer (breast, cervix, colorectal) and depression (Tables 1, 2). In the project where the Sickness Prevention Achieved through Regional Collaboration program (created in 1994 and carried out in rural areas across the USA) was implemented, preventive health services such as influenza vaccination to the elderly, hepatitis B immunization at schools, various cancer screenings, including breast, colon and cervical cancers, improved the health of individuals in rural areas²¹. In another study, a screening program for cardiovascular disease risk factors was conducted for high-risk individuals with hypertension and diabetes in rural areas, and the feasibility and practice of this program were found to be valuable²². The results of the present study and the literature findings demonstrate how valuable and beneficial preventive health services are for individuals living in rural areas.

Various perspectives students gained and new experiences were about understanding the rural life of individuals, including colorectal cancer screening, assessment of diabetes and depression risk (Table 2). A study determined that the students who made home visits to the elderly in rural areas understood the importance of preventive health services, the individual and environmental health problems of the elderly, and community life¹⁶. In the present study, nursing students, who have always worked in clinics, undertook health practices in rural areas for the first time. It is thought that it is important for the participants to experience the preventive health practices carried out in the present study in the rural areas. The contributions of these

practices to them, and the indication of their satisfaction with this situation, are included in the main themes and subthemes.

Characteristics referred to by NSs as part of public health nursing roles were protector, advocate, supporter, caregiver, coordinator, collaborator, educator, counselor, researcher, therapist, case manager, leader and care provider (Table 2). In a study examining the community health learning experiences of post-license nursing students in the transition from hospital to community health, the practice traits identified by students were prevention, leadership, autonomy and independence¹⁹. These findings illustrate that health practices carried out in rural areas can exhibit the roles of health professionals, who can be role models for their colleagues and students.

In this study, the major themes of emotions of the NSs regarding health screening in rural areas, feedback from screening participants, positive nursing characteristics, the advantages and disadvantages of doing health screening in rural areas, the contribution of work with health professionals and feedback for educators and researchers were determined. The emotions of the NSs doing health screening in rural areas were positive. This result shows that students are satisfied with this nursing practice.

In addition, according to the students, adult screening participants' positive emotions such as happiness and gratitude suggest that individuals who have been screened are also satisfied with this practice (Table 3). A study in which adults in rural areas were screened for non-communicable diseases stated that the participants were willing to participate in health screening²³. Evidence-based case studies are presented in projects where health screening is applied in rural areas. As a result of these studies, it was stated that cancer and cardiovascular disease screening rates increased, the health of individuals improved and preventive health services were carried out effectively. In a project carried out in New Mexico, one of these projects, individuals stated that their health was good and very good with health screenings, and the program was implemented in three other states²⁴. These results show that health screenings carried out in rural areas are effective, and that health professionals performing health screening and individuals living in rural areas who are disadvantaged in accessing health services are satisfied, happy and satisfied with these services.

Health professionals reveal positive nursing characteristics with health services in rural services. In this study, nursing qualities inherent in nursing such as professionalism, preventive and awareness-raising, supportive-helpful approach, educative-instructive, experience-providing, communicator, team collaboration, coordinator/planner and creativity were revealed in the nursing senior students (Table 3). In a study evaluating the experiences of NSs who moved from hospitals to community health services, nursing characteristics such as prevention-focused, autonomous, independent and leader were determined²⁵. Nurses working in rural areas have a wide range of roles, and these nurses are professionals who help those who need clinical support and assistance more. They are also people who respond to the health

needs and emergencies of individuals living in rural areas¹⁹. These nurses should have sufficient knowledge, skills and professional nursing qualifications for the protection and improvement of the health of their communities.

The advantages of health screening in rural areas were facilitating, saving time, reaching many people and creating awareness, fulfilling and implementing public health nursing roles (Table 3). In studies conducted in rural areas, it has been stated that providing health services in rural areas offers life-saving preventive services, improves the health of individuals, identifies individuals at risk, and increases the knowledge of individuals about self-efficacy and cancer screening²⁴. In one study, prevention, screening activities, cooperation with society and communication with individuals were determined as beneficial community health learning experiences for students in rural areas²⁵. In another study, it was determined that students who visit homes to support the elderly in rural areas understand the lives of the elderly, learn about environmental and individual factors affecting their health and wellbeing, and feel a strong affinity with the society¹⁶. Health services carried out in rural areas are advantageous for both health professionals and individuals.

The disadvantages of health screening in rural areas was another theme. The NSs reported the disadvantages as screening area conditions, time, food for students, cost and organisation (Table 3). These disadvantages are generally similar to the problems of individuals living in rural areas. In one study, the reasons for not providing adequate health care in rural areas were transportation problems, money for healthcare professionals and patients, travel problems including time, accommodation problems and excessive workload²⁶. In two studies, healthcare barriers in rural areas included the lack of trained personnel, lack of healthcare personnel and health services, lack of transport, unpredictable travel and weather conditions, limited internet access, lack of understanding and attitude of healthcare professionals to the needs of rural individuals, with language and culture identified as obstacles^{9,27}. According to the literature and study findings, it is necessary to increase the number of health personnel, facilitate transportation, train personnel and develop rural health policies in order to overcome the obstacles to health care in rural areas and to improve service delivery.

The NSs doing health screening in rural areas stated that working with healthcare professionals gave them development and experience in practice, and they saw the importance of team dynamics and harmony (Table 3). In a study conducted with students who made home visits to elderly people living in rural areas, the students emphasised the importance of teamwork and experienced a preventive home visit for the first time¹⁶. In one study, it was stated that a valuable source of learning for students

is nursing teachers (preceptor), and the nurses they work with facilitate multidisciplinary teamwork²⁵. Understanding the importance of teamwork by working with healthcare professionals and gaining experience by practising are important for the development of the NSs.

The NSs made suggestions regarding screening time and environment, number of screenings/teams and organisation in screening as feedback for educators and researchers (Table 3). In a study conducted by Steffy (2019), students suggested the following for education: multidisciplinary collaboration for different experiences and coordination of clinical areas, interaction of instructors with students and consideration of student's time¹⁹. Based on these results, it is essential for educators to perform a health screening in rural areas, when the weather conditions are appropriate, or to arrange the screening environment to be unaffected by weather conditions, and to organise the number of teams in the screening and the time of screening well to provide a quality health service. In the present study, nurse trainers made an intense effort on transportation, cooperation with team members, screening area planning, and task sharing of students. Student feedback is valuable in guiding planning for the future.

Limitations

It is a limitation that the results cannot be generalised due to the nature of qualitative research. Another limitation, despite the excellent reports of the students, was the inability to meet with students face to face and observe them during meetings, due to the pandemic. The fact that the students had experienced screening in the rural area once and participated in the screening for a day may not have been sufficient to reveal the experiences. It may be appropriate in future to repeat the study to determine nursing student experiences in field applications performed more than once.

Conclusion

Individuals living in rural areas are at a disadvantage in terms of access to health services. It is important to reveal the experiences of the NSs who have experienced health screening in rural areas for the first time, and to determine student experiences, perceptions and meanings related to health screening and rural areas. The results of this qualitative study revealed the positive emotions and positive nursing characteristics of the students who carried out health screenings in rural areas and adult individuals participating in the screenings, the advantages and disadvantages of this practice in rural areas, the benefits of working with health professionals and their feedback. The experiences of the NSs can be a guide for health professionals working in rural areas, researchers, lecturers in the field of health who will conduct screening in the future, and the NSs.

REFERENCES:

1 Food and Agriculture Organization. *Guidelines on defining rural areas and compiling indicators for development policy*. 2018.

Available: [web link](#) (Accessed 10 December 2019).

2 National Geographic. *Rural area*. 2020. Available: [web link](#)

(Accessed 14 September 2021).

3 Family Doctor. *Accessing care in rural communities*. 2019. Available: [web link](#) (Accessed 14 September 2021).

4 Smith KB, Humphreys JS, Wilson MG. Addressing the health disadvantage of rural populations: how does epidemiological evidence inform rural health policies and research? *Australian Journal of Rural Health* 2008; **16(2)**: 56-66. DOI link, PMID:18318846

5 Centers for Medicare & Medicaid Services. *Rural-urban disparities in health care in Medicare*. 2020. Available: [web link](#) (Accessed 15 April 2021).

6 Registered Nursing. *Guide to rural nursing*. 2020. Available: [web link](#) (Accessed 10 March 2022).

7 SurfAid International. *Five challenges of living in a remote community*. 2021. Available: [web link](#) (Accessed 10 February 2022).

8 University of North Carolina Wilmington. *Importance of nursing in rural communities*. 2021. Available: [web link](#) (Accessed 2 March 2022).

9 Demir Avcı Y, Gözüm S. Health service delivery models and tele-health for the elderly living in rural areas. *Turkish Journal of Family Medicine and Primary Care* 2018; **12(1)**: 56-67. DOI link

10 MedlinePlus. *Rural health concerns*. 2020. Available: [web link](#) (Accessed 12 March 2022).

11 Centers for Disease Control and Prevention. *About rural health*. 2021. Available: [web link](#) (Accessed 19 January 2022).

12 Rural Health Information Hub. *Education and training of the rural healthcare workforce*. 2021. Available: [web link](#) (Accessed 8 November 2021).

13 Michaels-Strasser S, Thurman PW, Kasongo NM, Kapenda D, Ngulefac J, Lukeni B, et al. Increasing nursing student interest in rural healthcare: lessons from a rural rotation program in Democratic Republic of the Congo. *Human Resources for Health* 2021; **19(53)**. DOI link, PMID:33879170

14 Zimmer L, Banner D, Aldiabat K, Keeler G, Klepetar A, Ouellette H, et al. Nursing education for rural and northern practice in Canada. *Journal for Nursing Education and Practice* 2014; **4(8)**: 162-172. DOI link

15 Pront L, Kelton M, Munt R, Hutton A. Living and learning in a rural environment: a nursing student perspective. *Nurse Education Today* 2013; **33(3)**: 281-285. DOI link, PMID:22732124

16 Iwasaki R, Hirai K, Kageyama T, Satoh T, Fukuda H, Kai H, et al. Supporting elder persons in rural Japanese communities through preventive home visits by nursing students: a qualitative descriptive analysis of students' reports. *Public Health Nursing* 2019; **36(4)**: 557-563. DOI link, PMID:30847988

17 Heidari MR, Norouzadeh R. Nursing students' perspectives on clinical education. *Journal of Advances in Medical Education & Professionalism* 2015; **3(1)**: 39-43.

18 Yıldırım A, Şimşek H. *Qualitative research methods in the social sciences*. Ankara: Seçkin Publisher, 2018; 10-30.

19 Steffy ML. Community health learning experiences that influence RN to BSN students interests in community/public health nursing. *Public Health Nursing* 2019; **36(6)**: 863-871. DOI link, PMID:31596026

20 Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care* 2007; **19(6)**: 349-357. DOI link, PMID:17872937

21 RHHub. *Sickness prevention achieved through regional collaboration (SPARC, Inc.®)*. 2021. Available: [web link](#) (Accessed 8 March 2022).

22 Newtonraj A, Selvaraj K, Purty AJ, Nanda SK, Arokiaraj MC, Vincent A, et al. Feasibility and outcome of community-based screening for cardiovascular disease risk factors in a remote rural area of South India: the Chunampet rural-cardiovascular health assessment and management program. *Indian Journal of Endocrinology and Metabolism* 2019; **23(6)**: 628-634. DOI link, PMID:32042699

23 McHugh M. Interrater reliability: the kappa statistic. *Biochemia Medica (Zagreb)* 2012; **22(3)**: 276-282. DOI link

24 Gözüm S, Tuzcu A, Muslu L, Aydemir K, Ilgaz A, Dağistan Akgöz A, et al. Risk frequency for some non-communicable diseases in adult individuals living in rural areas. *Cukurova Medical Journal* 2020; **45(1)**: 157-169. DOI link

25 RHHub. *Rural project examples: health screening*. 2020. Available: [web link](#) (Accessed 15 July 2021).

26 CRANAPlus Rural Nursing Networks. *Rural nursing in Australia*. Barton, ACT: CRANAPlus Rural Nursing Networks, 2017.

27 Weinhold I, Gurtner S. Understanding shortages of sufficient health care in rural areas. *Health Policy* 2014; **118(2)**: 201-214. DOI link, PMID:25176511