

## UNDERSTANDING HEALTH VULNERABILITIES IN RURALITY WITH THE SUPPORT OF THE PROBLEM-BASED LEARNING METHOD

COMPRENDIENDO VULNERABILIDADES EN SALUD EN LA RURALIDAD CON APOYO DEL MÉTODO DE APRENDIZAJE BASADO EN PROBLEMAS

COMPREENENDO VULNERABILIDADES EM SAÚDE NA RURALIDADE COM APOIO DO MÉTODO DE APRENDIZAGEM BASEADA EM PROBLEMAS

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**Manuscript received:** July 18, 2023.

**Approved on:** March 15, 2024.

**Published on:** June 18, 2024.

### Abstract

The rural population has its own vulnerabilities and potentialities that imply health care. Active Methodologies (AM) are tools that favor the recognition of social determinants involved in health-disease processes. The study aimed to report the experience of master students in the study of the dimensions of health vulnerabilities in the context of rurality through the AM. The experience gave in 2023, starting from the initial exposition on the concepts of risk and

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vulnerability behavior in the light of Ayres' theoretical framework. Later, the students elaborated Concept Maps that addressed these and other correlated issues. Subsequently, the groups developed problem situations contextualized to rurality, promoting Problem-Based Learning (PBL). Finally, Live Maps were built, stimulating creativity in the search for solutions. The process of immersion provided by the AM was opposed to traditional teaching-learning methods, as it broadened the students' vision about the theme. The concept maps provided the theoretical basis necessary for the consolidation and continuity of the process. The construction of the problem situation generated reflection on the determinants of vulnerability of individuals and rural communities in their territories. The socialization of Live Maps provided the conceptual rescue and led to exchanges of knowledge in a dialogical and participatory way. The use of AM in the study of vulnerability provided a critical-reflective construction on the dimensions of the problem, qualifying the training processes. The PBL facilitated the recognition of the applicability of concepts in practice, showing a way to strengthen the integral health care of the rural population.

**Keywords:** Health Vulnerability; Rural Population Health; Contextualized Learning; Problem-Based Learning.

## Resumen

La población rural presenta sus propias vulnerabilidades y potencialidades que implican atención en salud. Las Metodologías Activas (MA) son herramientas que favorecen los determinantes sociales implicados en procesos de salud-enfermedad. El estudio tuvo como objetivo relatar la experiencia de estudiantes de maestría en el estudio de dimensiones de vulnerabilidades en salud en el contexto de ruralidad a través de MA. La experiencia se dio en el año 2023, partiendo de la exposición inicial sobre conceptos de comportamiento de riesgo y vulnerabilidad a la luz del marco teórico de Ayres. Después elaboraron Mapas Conceptuales abordando esas y otras preguntas relacionadas. Posteriormente, desarrollaron situaciones-problema contextualizadas a la ruralidad, promoviendo el Aprendizaje Basado en Problemas (ABP). Finalmente construyeron Mapas Vivos, estimulando la creatividad en búsqueda de soluciones. El proceso de inmersión proporcionado por MA se opuso a los métodos tradicionales de enseñanza-aprendizaje, ampliando la visión de alumnos acerca de la temática. Los mapas conceptuales proporcionaron la base teórica necesaria para consolidación y continuidad del proceso. La construcción de situación-problema generó una reflexión sobre determinantes de vulnerabilidad de individuos y comunidades rurales en sus territorios. La socialización de Mapas vivos proporciono recuperación conceptual y condujo a intercambios de conocimientos de manera dialogada y participativa. El uso de MA en el estudio de vulnerabilidad proporciono una construcción crítico-reflexiva sobre dimensiones de la problemática, calificando procesos formativos. La ABP facilito el reconocimiento de aplicación de conceptos en la práctica, demostrando ser un camino para el fortalecimiento de atención integral de salud de la población rural.

**Palabras claves:** Vulnerabilidad en Salud; Salud de la Población Rural; Aprendizaje Contextualizada; Aprendizaje Basado en Problemas.

## Resumo

A população rural apresenta vulnerabilidades e potencialidades próprias que implicam na assistência à saúde. As Metodologias Ativas (MA) são ferramentas que favorecem o reconhecimento dos determinantes sociais implicados nos processos de saúde-doença. O estudo objetivou relatar a experiência de mestrands no estudo das dimensões das vulnerabilidades em saúde no contexto da ruralidade através das MA. A vivência deu-se no ano de 2023, partindo da exposição inicial sobre os conceitos de comportamento de risco e

vulnerabilidade à luz do referencial teórico de Ayres. Após, os alunos elaboraram Mapas Conceituais que abordavam essas e outras questões correlacionadas. Na sequência, os grupos desenvolveram situações-problema contextualizadas à ruralidade, promovendo a Aprendizagem Baseada em Problema (ABP). Por fim, foram construídos Mapas Vivos, estimulando a criatividade na busca por soluções. O processo de imersão oportunizado pelas MA se opôs aos métodos tradicionais de ensino-aprendizagem, pois ampliou a visão dos alunos acerca da temática. Os mapas conceituais forneceram o embasamento teórico necessário para a consolidação e continuidade do processo. A construção da situação-problema gerou reflexão sobre os determinantes da vulnerabilidade de indivíduos e comunidades rurais em seus territórios. A socialização dos Mapas Vivos proporcionou o resgate conceitual e conduziu a trocas de saber de maneira dialógica e participativa. O uso de MA no estudo da vulnerabilidade proporcionou uma construção crítica-reflexiva sobre as dimensões da problemática, qualificando os processos formativos. A ABP facilitou o reconhecimento da aplicabilidade de conceitos na prática, mostrando-se um caminho para o fortalecimento da atenção integral à saúde da população rural.

**Palavras-Chave:** Vulnerabilidade em Saúde; Saúde da População Rural; Aprendizagem Contextualizada; Aprendizagem Baseada em Problemas.

## Introduction

The expansion of the concept of health, driven by health reform in Brazil, brought new perspectives to the daily life of health services in the country. The attention that was previously based on a curative and medical-centered model, underwent a capillarization that integrates the most diverse services and professionals in favor of health promotion, protection and recovery (Mendonça; Lanza, 2021).

The principles and guidelines of the Unified Health System (SUS) support a new look at health, extrapolating the biological aspects to encompass all the determinants that imply in health-disease processes. Thus, understanding comprehensiveness requires the recognition that health and social determinants of the subject are inseparable in understanding any situation that poses a threat to their complete physical, mental and social well-being (Silva *et al.*, 2018).

In contrast to this perception, there are still important inequities regarding access and quality of care offered to different population groups in Brazil. Arruda, Maia and Alves (2018) highlight the differences in health needs identified between the urban and rural being the latter more dependent on public services and more affected by inequalities in the supply and resolution of health services when compared to the urban population.

The population inserted in the rural context presents territorial aspects and distinct experiences to access health services, bringing with it customs, habits and singularities that must be considered by professionals in health care and management (Magalhães *et al.*, 2022). For Shimizu *et al.* (2018), there was an important improvement in care processes regarding the humanization of care. However, the difficulty of geographic, institutional, cultural and/or social access, associated with the maintenance of a care model focused on the punctual treatment of diseases and little individualized to the rural population, limits the potential of their care, vulnerability and weaknesses related to health.

The concept of vulnerability is deeply discussed in Brazil by Ayres (2023). The author argues that the conditions of life and health are crossed by individual, social and programmatic questions, not only falling under the control of the subject and his collectivity. Florêncio and Moreira (2021) add that the concept of vulnerability is linked to the guarantee of citizenship of politically fragile populations from the perspective of human rights.

The study of vulnerability was developed through a theoretical and practical movement. Thus, health problems and the correspondence between being vulnerable and being cared for involve power relations, ethical, cultural and social issues, as well as political and economic processes that approach individuals, implying - or not - policies (Cestari *et al.*, 2017).

The Active Methodologies (AM) are allied in the process of understanding the different situations of vulnerabilities, especially for fostering in the subjects critical, reflective and creative thinking. Among the AM, Problem-Based Learning (PBL) can be adhered to in teaching, as it allows analyzing, understanding and proposing solutions to problems (Macedo *et al.*, 2018; Lopes; Silva-Filho; Alves, 2019).

Faced with these assumptions, the present study aims to report the experience of masters in the study of health vulnerability(s) in the context of rurality using the Active Methodology called Problem-Based Learning (PBL). Through this immersion, it was possible to problematize the issues related to the conditions of access to health, constitutions, singularities and quality of life of populations considered vulnerable in the rural context, contributing with proposals for the expansion of Health Care Networks (HCN) and strengthening their joints.

## Methodology

This is a descriptive study, of the type of experience report, developed from activities experienced in the discipline "Vulnerabilities of the Population in the Context of Rurality", belonging to the curricular matrix of the Academic Master's course of the Post-graduate Program Degree in Health and Rurality from the Federal University of Santa Maria (UFSM), located in the campus of Palmeira das Missões/RS.

The discipline began in March 2023, in the face-to-face modality, with classes held biweekly, on Wednesdays, lasting 4 hours each class, conducted by three teachers of the Program, all with training in the field of Nursing. The group of students in the discipline is composed of professionals in nursing, nutrition, medicine, social service, aesthetics and cosmetics, pharmacy, psychopedagogy and dentistry.

The discipline was divided into four stages: initial discussion and conceptualization of risk and vulnerability; construction of concept maps on the initial themes; construction of problem situations; and construction of live maps. All stages had as central point the debate about the vulnerabilities present in the rural context, based on the Active Methodology called Problem-Based Learning.

The Active Methodologies (AM) feature a critical-reflective approach, stimulating the teaching-learning process, to awaken in the student the desire to seek knowledge, stimulating the development of reasoning skills. The construction of problem situations is a method belonging to the AM that allows a critical reflection on the proposed problem, stimulating the search for solutions that can solve it based on the Problematization Methodology (Macedo *et al.*, 2018; Gonçalves; Gonçalves, 2020).

Problem-Based Learning (PBL), known in the English language as Problem-Based Learning (PBL), consists of a Problematization Methodology, in which a problem is presented close to the real or simulated so that, from discussions, solutions are listed (Rodrigues *et al.*, 2019; Macedo *et al.*, 2018; Gonçalves; Gonçalves, 2020).

The use of PBL aims to improve the critical thinking of students, stimulate the search for knowledge, develop autonomy in the teaching-learning process and the

ability to work as a team. In addition, it develops creativity, making it possible to explore solutions to a situation in an integral and expanded way (Santos *et al.*, 2019).

## Results

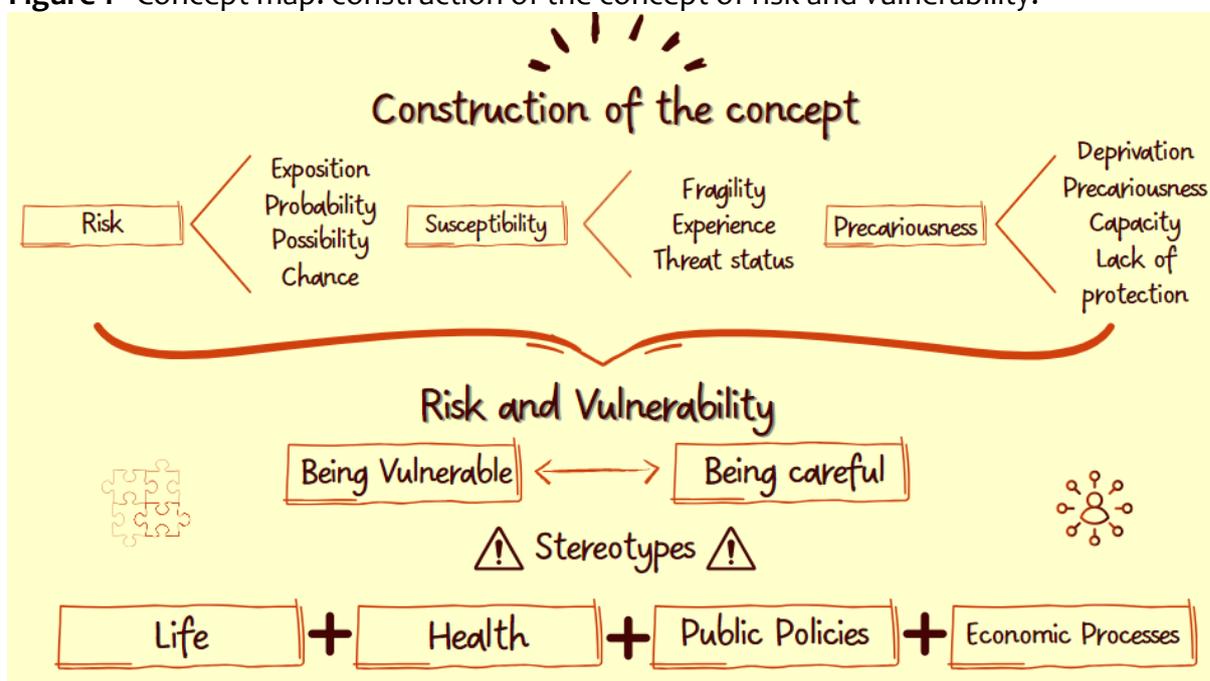
At first, there was a discussion to understand the previous knowledge of students about the concepts of "risk" and "vulnerability". Then, the emerging concepts were discussed based on authors who deal with these themes, especially Ayres (2003; 2023).

From this introduction to the theme, it was possible to distinguish the concepts of risk and vulnerability, understanding that risk behaviors do not include the complexity of health issues. Looking at health-disease processes using only the behavior of individuals as a lens is a limited practice in its conception and leads to decontextualized interventions. That is, risk is one of the components of a web of conditions, while the concept of vulnerability understands that, in addition to individual behavior, we are subject to several individual social and programmatic that infer directly in our health condition, providing us with a unique and experience in the face of the same situation of vulnerability(s).

Another point emerged from the discussions, based on the theoretical framework of Ayres, concerns the potentialities contained in vulnerability, since being in a condition of vulnerability does not necessarily put the individual in a position of fragility or inferiority, but that the recognition of this vulnerability can present you a way to achieve acceptance and support. After this initial discussion, in the subsequent classes the students were distributed in groups to begin the construction of a Concept Map that contemplated the concepts described earlier, to synthesize the main notions so far unveiled. The group responsible for the construction presented here was composed of a nurse, a doctor, a psychopedagogue and a nutritionist, with the help of the teachers of the discipline.

The Concept Map consists of a schematic representation that encourages students to relate concepts (Medeiros; Ribeiro; Sousa, 2021). The first part of the Concept Map developed by the authors of this study brought the construction of the concept of vulnerability proposed by Ayres (2003; 2023), bringing as important elements the risk, susceptibility and precariousness. In addition, the map denotes that being vulnerable is a condition to be careful, with attention to stereotypes. This first stage of the Map can be seen below, in Figure 1.

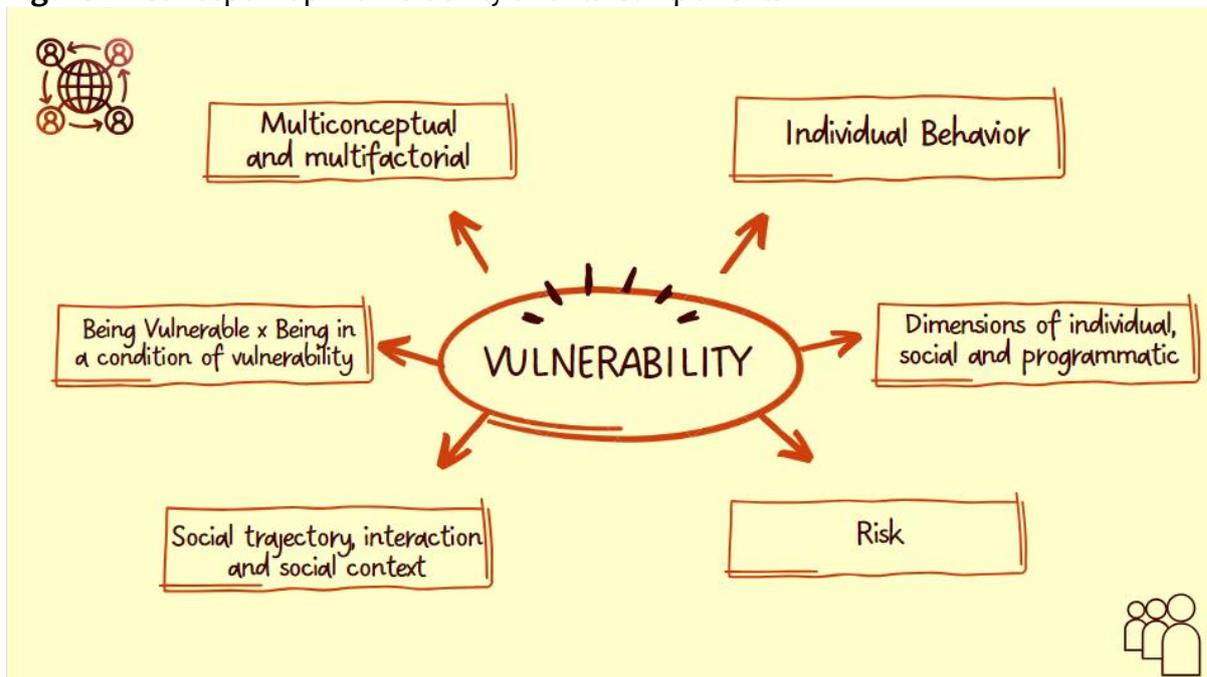
**Figure 1** - Concept map: construction of the concept of risk and vulnerability.



Source: self-made, 2023.

The second part of the Concept Map, as can be observed in Figure 2, was developed to demonstrate in a dynamic and synthetic way that vulnerability is multiconceptual and multifactorial, being distributed in three dimensions: individual, social and programmatic. However, it is noteworthy that this division is only for study purposes, since the three dimensions coexist in a complementary way. In addition, it is denoted that being vulnerable is different from being vulnerable at a given moment (Ayres, 2003; Ayres, 2023).

Figure 2 - Concept Map: Vulnerability and Its Components.



Source: self-made, 2023.

After the completion of the Concept Map, the group elaborated a problem-situation that dealt with the concepts of risk and vulnerability, linked to the rural context, to problematize the potential and weaknesses perceived in the health care of the rural population.

The hypothetical story created by the group of authors corresponded to a "family group composed of four people, residents of an adjacent rural area of a small municipality, whose were: the father, 38 years old man, disabled person (PwD), small farmer and provider of most of the family income; the mother, 35 years old woman, and formal worker in the urban area of his municipality; the eldest son, aged 6 years old, diagnosed with Autism Spectrum Disorder (ASD), inserted in a regular education school; and the youngest daughter, aged 4 years, previously healthy, who doesn't go to school yet. The Family Health Strategy (FHS) of the territory where they lived would not be functioning properly due to the lack of human resources and the family would have to move to the urban area to ensure health care. The mother did not correctly perform the treatment for her health condition, because she needed to work all day outside her territory, needing time to travel to the city, in addition to caring for two children, dependent on greater care due to diagnosis of ASD.

*The father with hearing loss did not use hearing aids, because he was not able to afford it and therefore faced difficulties to communicate with buyers of the products produced in his land. The girl had no friends to socialize, because she did not attend school and the community did not have leisure areas, and there were no children living near her residence. The boy, although referred to the Association of Parents and Friends of the Exceptional (APFE), did not attend it, because he had no one to take him to the city".*

After the elaboration of the problem-situation, it was discussed in class with the other students to list what were the weaknesses and potentialities found, as well as the vulnerabilities faced by this family, based on the concept proposed by Ayres (2003; 2023), to find solutions to the problems.

In the next stage, the proposal was to build a Live Map, an instrument that made it possible to visualize the territorial characteristics and list the support networks that could aid this family. The collective construction of the group can be observed in Photo 1.

The Live Map corresponds to a territorialization tool that makes it possible to spatially divide micro and macroregions, highlighting places, individuals, families, enabling knowledge and dynamicity about particular and collective issues (Armesto et al., 2022). On the map, everyone received a specific color, and there is a color designated for the family set. According to the colors, markings were made on the map, which corresponded to places and services in the municipality that could be mobilized in the care of individuals and/ or family. In the presentation of the map to the class, the intersectoral networks that could be triggered were discussed.

The instrument was built from the map of the municipality chosen for the elaboration of the problem-situation, where services and places that could understand the relationships of this family group were pointed out. The main services identified were the existing FHS in the territory, which at the time would not be functioning properly, but was pointed out as a service of extreme importance for health promotion, disease prevention, treatment of diseases and rehabilitation, in their own territory, enhancing their ability to meet the specificities of the family through the recognition of

their social and life context. The FHS also corresponds to the family entrance door into the health system, opening the possibility of referral to other services, as necessary.

**Photo 1** - Live map drawn from the problem situation.



**Source:** self-made, 2023.

In the case of the mother, this could perform the monitoring of her chronic health condition through multidisciplinary care and participation in groups. The father could receive assistance and be referred to services that could improve his quality of life as a PwD, as a hearing rehabilitation service. The FHS could still aid and refer the child with ASD to specialized services, such as neuropediatricist, phonoaudiologist, occupational therapist and nutritionist. For the healthy child, in the FHS, growth and development monitoring could be performed, as well as compliance with the vaccination schedule of both children. In addition to attending to the particularities of each member of the family group, the emerging spontaneous demands could be resolved in the FHS.

Other points understood as important were: possible community activities (leisure, church, square, health academy, etc.) enabling the socialization of children and adults, rural union and the Technical Assistance and Rural Extension Company (TAREC) assisting the small farming father, the Reference Center for Social Assistance (RCSA) and Public Defender to resolve legal issues, such as the possibility of reducing the mother's workload due to the care of the child with ASD. APFE was also pointed out as a relevant point in this support network, since it offers essential services for the boy with ASD, such as phonoaudiologist and occupational therapist. The University was identified as a resource in the network, since it carries out extension and research actions in the community that include several of the demands perceived in the family, contributing positively to the improvement of services.

As weaknesses, the students listed, from the Live Map, the issues related to physical distance, since most of the services are in the city and sometimes the transport does not reach the most remote rural areas. The conditions of the school were also the subject of discussions, since the structure of the school may not be able to guarantee the assistance necessary for the effective inclusion, learning and development of the boy. Although the Brazilian Law on the Inclusion of Persons with Disabilities provides for the provision of adequate conditions for children with special conditions to access and remain in regular education (Brazil, 2015) sometimes schools do not have professionals with adequate preparation to meet these children, as in the case of students with ASD. The FHS, previously seen as a relevant point in the network, was also shown as a weakness, since in the problem-situation this space did not have enough human resources to ensure its operation, negatively impacting the life of the family who needed to move to the urban area to receive basic care.

These vulnerabilities perceived by students, based on PBL, stimulated critical and reflective thinking, so that actions to solve them were jointly found. Thus, the students pointed out as necessary an intersectoral articulation at the municipal level, which aimed to facilitate access to the city through means of transport, as well as the expansion and improvement of the health service that was already inserted in the so that this family - and the rest of the community - did not need to leave their territory to

be served. Still, in the field of education, the possibility of exchanges with health services was discussed, aiming at the permanent education of professionals present in the teaching of children and adolescents so that they can act in an inclusive way.

Therefore, the application of Active Methodologies in the teaching-learning process, especially the use of Problem-Based Learning, was considered a positive experience, which allowed the students of the master's course to exercise creativity and criticality, proposing methods for solving the adversities proposed in the debates generated about the problem situation and construction of the Conceptual Map and Living Map.

### **Discussion**

Health education today is a topic surrounded by dilemmas. On the one hand, there are discourses that trigger the need to transform the teaching-learning model and on the other, it is defended the maintenance of traditional forms of teaching. This positivist tradition - an epistemological model that is faithfully based on reason and objectivity - is a factor that hinders the recognition of elements concerning the human being and that permeate the health-disease process (Mourthé Junior; Lima; Padilha, 2018).

The traditional model is criticized by Freire (2018, p. 79-82), who calls it banking education or lecturer and characterizes it as a method of memorization and repetition of words. For Freire, this model discourages criticality on the part of the student, making him susceptible to oppressors. The author also proposes the adoption of Problematizing Education, which breaks with the verticalization of banking education and puts the educator and educating at the same level, in which both learn and teach. This horizontality defended by Freire (2018, p. 95-96) could be observed in the present experience reported, since the teachers of the course provided a space for the development of activities and debate with the other individual and collective construction of knowledge through the interaction between knowledge.

Faced with the challenge of a training in health that is based on a learning based on the interaction between the subjects and the world, between the objective and subjective, between science and art, arise the Active Methodologies, which require the student proactivity, involvement, participation and autonomy in the learning process (Mourthé Junior; Lima; Padilha, 2018).

The way the activities were proposed aroused in the students the interest of seeking more information in the literature for the theoretical basis necessary for the preparation of support materials and the problem-situation used in the collective debate. In addition, the discussions potentiated the students' critical thinking to seek solutions to the proposed problems. The fundamental aspect of Problem-Based Learning is to instigate critical thinking when compared to traditional readings, in addition to improving communication and creativity (Santos *et al.*, 2019).

Now, studying vulnerability in the light of the concept of Ayres (2023) is something complex, which demands the understanding of several factors that go far beyond biological, and that requires a critical look at the factors that determine it. The use of APB can be allied in understanding the dimensions of this concept, because it assimilates abstract elements to the real ones. Thus, this methodology meets the liberating and problematizing education proposed by Paulo Freire (2018), which enables a learning that values dialogue, reflection and, consequently, the transformation of the subjects (Macedo *et al.*, 2018).

Structuring and solving a problem-situation that met the individual, social and programmatic dimensions of vulnerability was a challenge for the students, requiring a look that extrapolated the risk conditions that the problem-situation represented. However, the provocation had a positive return, adding in the construction of knowledge and obtaining skills inherent in the practice of teaching. The problem-situation was a trigger element of interdisciplinary debates in the classroom, enabling the contribution of professionals from various areas of knowledge and boosting teamwork (Lopes; Silva-Filho; Alves, 2019; Magalhães, 2021).

Given the relationships found, it is evident that the dimensions of vulnerability described by Ayres (2001) were encompassed in all stages of the process. Using this lens, the individual component of vulnerability, which refers to the degree of education of

the individual about health practices and the ability to elaborate and incorporate knowledge in their daily lives, behavior of the mother in relation to her hypertensive condition. In this situation, although there was knowledge about the pathology, the lack of adherence to appropriate treatment, attributed to the overload of work added to the care of the children, exposed the mother to the worsening of the disease, placing her in a situation of vulnerability.

On the social component of vulnerability, which deals with obtaining information and the power to transform them into health practices depending on conditions such as schooling and the availability of resources (Ayres, 2001; Dimenstein; Cirilo Neto, 2020), identified that the father was in a vulnerable situation, considering that he did not use the hearing aid because he did not have the financial conditions to acquire it. In this case, low hearing impaired their business relationships, which could compromise even the family's income.

The children were also exposed to social vulnerability because the remote location of the residence compromised the interaction with other children and the regularity in the specialized care service. Dealing specifically with the girl, Habowski and Ratto (2023) discuss the vast use of digital resources as a means of communication, including among children. Although this could be a resource used by the girl as an approach to other children, the reflections of the authors point to the irreplaceable role of the spaces of encounter in the expressions and development of the child, since being a child is a social construction. In addition, exposure of the child to electronic devices could bring more harm than benefit to the girl, harming her potential and full development. Regarding the boy, Souza and Nogueira (2021) portray the importance of the insertion of children with ASD in specialized services such as APFES. Although the authors identify some difficulties regarding the choice and adaptation of teaching methodologies appropriate to this public, the study reinforces the potential of these sites in the neuropsychomotor development of the child and in their social integration.

The programmatic component, in turn, is related to social resources and public policies linked to a given problem. It refers to the link established between service and the territory of coverage, to the existing social resources in the area and health care

practices, ranging from promotion to rehabilitation (Ayres, 2001; Dimenstein; Cirilo Neto, 2020). The inoperability of the FHS in the territory in which the family lives compromises its access to health services, whether they are used as a place of direct assistance or as a gateway to other points of the health network.

It is observed, therefore, the integration of the dimensions of individual, social and programmatic vulnerability through the previous exemplification and the other situations of vulnerability experienced by the family problem, in which a viable alternative is to rescue the life history of the subjects, understanding their beliefs, cultures and values, as well as their family and community coexistence. In addition, it is relevant to consider the social and institutional relations, as well as the potentialities and capacities of social transformation of the subject, considering the particularities of the rural environment, as highlighted by Ayres (2001). The complexity of the vulnerability was explored in the elaboration of the problem-situation, as well as in the constitution of the support network of the presented family.

The National Primary Health Care Policy (NPHCP), established in 2006 and reissued in 2011 and 2017, presents guidelines that guide the organization of Primary Health Care (PHC) in the country, considered the user's priority gateway to the Unified Health System (SUS) and the privileged locus for the development of comprehensive care for people's health (Soares *et al.*, 2020). The logic under which the FHS is configured allows the multifaceted view of vulnerability to be properly understood, since the work performed by the teams of these services excels by the expanded view of health and disease processes, experiences of vulnerability issues for everyone, family or community. In addition, the FHS are inserted in the territories and begin to integrate them organically, which instrumentalizes health teams to identify and recognize the health needs of the population, understanding of ways of producing care and ways of accessing health services (Vicari; Lago; Bulgarelli, 2022). This adaptability makes health care more comprehensive, dialogical and resolute, meeting the SUS proposal of comprehensive health care (Santos; Mishima; Merhy, 2018).

The performance of excellence of FHS professionals in the rural environment requires the evaluation of cultural and social determinants, such as customs, traditions and values, to create the appropriate conditions for the improvement of care, access to

quality health to rural peoples (Silva *et al.*, 2018). Therefore, these concepts must permeate the training of health professionals, being constantly resumed in their continuing education, as well as in the actions of Permanent Education in Health, resulting in qualified training processes and appropriate to the reality of each population. Given the complexity and multidimensionality of the concept of vulnerability (Ayres, 2003), the training of health professionals should be based on methodologies that facilitate the understanding of the multiple components that surround as well as the applicability of the concept in health care.

Therefore, the role of graduate education aligned with these concepts in the qualification of health professionals and researchers is highlighted. As mentioned by Freitas, Demarchi and Rossit (2018), the discussion spaces promoted in the classroom have a rich potential for interdisciplinary exchanges, which broaden the look of teachers and students on the same central point, adding ideas, knowledge, and considerations from different backgrounds. Such possibilities can positively influence the practice of professionals who seek graduate studies as a means of permanent education, as well as makes researchers more sensitive to the multiple dimensions of health issues, strengthening the search for the consolidation of the SUS as a pragmatic tool for coping with vulnerability.

## Final thoughts

The experience presented in this study generated the reflection about the teaching processes applied through Active Methodologies. The analysis carried out around the problem situation outlined a path of participatory, emancipating and multidisciplinary learning around the issues of vulnerability of the rural population. It is understood that comprehensive health care requires a welcoming view of individuals, considering their particularities and the context in which they are inserted.

The horizontal learning proposal reinforced the efficiency of PBL as a participatory method of learning and teaching. The reflection of the living map and the problem situation around the concept of vulnerability could promote the renewal of

care practices, meeting the principles of integrality and equity of the SUS. The recognition of the complexity of the vulnerability of communities, groups and subjects, incorporating macro and micropolitical determinants, ranging from the mode of social organization to the daily dynamics and singular ways of life, empowering the protagonism of these, the mobilization of resources and potentialities existing in the territories.

Only through the offer of problematizing teaching methods of reality is it possible to critically view the care and organization of health services. The articulation of the theory with the practice provided through the discipline added positively to the specific group and the collective of teachers and students, integrating the knowledge from theories and health practices that were shared in the meetings.

## References

ARMESTO, L. M.; ALONSO, T. R.; ORTEGA, R. A. S.; TORRE, L. K. D.; RIBEIRO, A. V. G.; BAUEB, J. F.; DAVID, G.; VACCAREZZA, G. F. O mapa vivo como estratégia de monitoramento das políticas públicas de saúde - uma revisão integrativa. **RECISATEC - Revista Científica Saúde e Tecnologia**, v.2, n.1, p.e2165, 2022.

ARRUDA, N. M.; MAIA, A. G.; ALVES, L. C. Desigualdade no acesso à saúde entre as áreas urbanas e rurais do Brasil: uma decomposição de fatores entre 1998 e 2008. **Cadernos de Saúde Pública**, v.34, n.6, p.1-14, 2018.

AYRES, J. R. C. M.; FRANÇA JÚNIOR, I.; CALAZANS, G. J.; SALETTE FILHO, H. C. O conceito de vulnerabilidade e as práticas de saúde: novas perspectivas e desafios. In: Czeresnia, D.; Freitas, C. M. **Promoção da saúde: conceitos, reflexões, tendências**. Rio de Janeiro: Editora Fiocruz, 2003;

AYRES, J. R. C. M. Sujeito, intersubjetividade e práticas de saúde. **Ciência & Saúde Coletiva**, v.6, n.1, p.63-72, 2001.

AYRES, J. R. Vulnerabilidade, Cuidado e integralidade: reconstruções conceituais e desafios atuais para as políticas e práticas de cuidado em HIV/Aids. **Saúde em Debate**, v.46, p.196-206, 2023.

BRASIL. **Lei brasileira de inclusão da pessoa com deficiência**: Lei nº 13.146, de 6 de julho de 2015, que institui a Lei brasileira de inclusão da pessoa com deficiência (Estatuto da pessoa com deficiência). Brasília: Câmara dos Deputados, 2015.

CESTARI, V. R. F.; MOREIRA, T. M. M.; PESSOA, V. L. M. D. P.; FLORÊNCIO, R. S.; SILVA, M. R. F. D.; TORRES, R. A. M. The essence of care in health vulnerability: a Heideggerian construction. **Revista Brasileira de Enfermagem**, v.70, n.5, p.1112–1116, 2017.

DIMENSTEIN, M.; CIRILO NETO, M. Abordagens conceituais da vulnerabilidade no âmbito da saúde e assistência social. **Revista Pesquisas e Práticas Psicossociais**, v.15, n.1, p.1-17, 2020.

FLORÊNCIO, R. S.; MOREIRA, T. M. Modelo de vulnerabilidade em saúde: esclarecimento conceitual na perspectiva do sujeito-social. **Acta Paulista de Enfermagem**, v.34, p. eAPE00353, 2021.

FREIRE, P. **Pedagogia do oprimido**. 65 ed. Rio de Janeiro/São Paulo: Paz e Terra, 2018;

FREITAS, M. A. O.; DEMARCHI, G. S. S.; ROSSIT, R. A. S. Educação Interprofissional na pós-graduação stricto sensu: o olhar dos egressos. **Interface - Comunicação, Saúde, Educação**, v.22, p.1647–1659, 2018.

GONÇALVES, M. F.; GONÇALVES, A. M.; GONÇALVES, I. M. F. Aprendizagem baseada em problemas: uma abordagem no ensino superior na área da saúde. **Práticas Educativas, Memórias e Oralidades - Rev. Pemo**, v.2, n.1, p.1–12, 2020.

HABOWSKI, A. C.; RATTO, C. G. O brincar das crianças em tempos digitais: tensionamentos atuais. **Cenas Educacionais**, v.6, n.e17033, p.1-23, 2023.

LOPES, R. M.; SILVA-FILHO, M. V.; ALVES, N. G. **Aprendizagem baseada em problemas: fundamentos para a aplicação no ensino médio e na formação de professores**. Rio de Janeiro: Publiki, 2019.

MACEDO, K. D. S.; ACOSTA, B. S.; SILVA, E. B. D.; SOUZA, N. S. D.; BECK, C. L. C.; SILVA, K. K. D. D. Active learning methodologies: possible paths to innovation in health teaching. **Escola Anna Nery**, v.22, n.3, p.e20170435, 2018.

MAGALHÃES, D. F. R. Interdisciplinaridade e aprendizagem baseada em problemas (ABP): uma breve revisão bibliográfica. **Brazilian Journal of Development**, v.7, n.1, p.2877-2886, 2021.

MAGALHÃES, D. L.; MATOS, R. S.; SOUZA, A. O.; NEVES, R. F.; COSTA, M. M. B.; RODRIGUES, A. A.; SOUZA, C. L. Acesso à saúde e qualidade de vida na zona rural. **Research, Society and Development**, v.11, n.3, p.e50411326906, 2022.

MEDEIROS, J. O.; RIBEIRO, R. C.; SOUSA, M. N. A. Mapa Conceitual como ferramenta de aprendizagem: Revisão Integrativa da Literatura. **SANARE - Revista de Políticas Públicas**, v.19, n.2, 2021.

MENDONÇA, E. M.; LANZA, F. M. Conceito de saúde e intersetorialidade: implicações no cotidiano da atenção primária à saúde. **Revista Psicologia e Saúde**, v.13, n.2, p.155-164, 2021.

MOURTHÉ JUNIOR, C. A.; LIMA, V.; PADILHA, R. Q. Integrating emotions and rationalities for the development of competence in active learning methodologies. **Interface**, v.22, n.65, p.577-588, 2018.

RODRIGUES, F. S. M.; ERRANTE, P. R.; LIMA, R. Y.; CARMO, A. D. O.; SILVA, E. F.; GEHRKE, F.; CARVALHO, D. S.; TIKAZAWA, E. H.; FERRAZ, R. R. N.; CARICATI-NETO, A.; TAHA, M. O. Vantagens da utilização do método de aprendizagem baseada em problemas (MAPB) em cursos de graduação na área da saúde. **Revista Ibero-Americana de Estudos em Educação**, v.14, n.2, p.340-353, 2019.

SANTOS, D. S.; MISHIMA, S. M.; MERHY, E. E. Processo de trabalho na Estratégia de Saúde da Família: potencialidades da subjetividade do cuidado para reconfiguração do modelo de atenção. **Ciência & Saúde Coletiva**, v.23, n.3, p.861-870, 2018.

SANTOS, M. Z.; SANTOS, M. Z. D.; OTANI, M. A. P.; TONHOM, S. F. D. R.; MARIN, M. J. S. Degree in Nursing: education through problem-based learning. **Revista Brasileira de Enfermagem**, v.72, n.4, p.1071-1077, 2019.

SHIMIZU, H. E.; TRINDADE, J. D. S.; MESQUITA, M. S. D.; RAMOS, M. C. Avaliação do Índice de Responsividade da Estratégia Saúde da Família da zona rural. **Revista da Escola de Enfermagem da USP**, v.52, p.e03316, 2018.

SILVA, E. M.; PORTELA, R. A.; MEDEIROS, A. L. F.; CAVALCANTE, M. C. W.; COSTA, R. T. A. Os desafios no trabalho da enfermagem na estratégia de saúde da família em área rural: revisão integrativa. **Hygeia - Revista Brasileira de Geografia Médica e da Saúde**, v.14, n.28, p.1-12, 2018.

SILVA, M. F. F.; SILVA, E. M.; OLIVEIRA, S. L. S. O.; ABDALA, G. A.; MEIRA, M. D. D. Integralidade na atenção primária à saúde. **REFACS**, v.6, n.supl.1, p.394-400, 2018.

SOARES, A. N.; SILVA, T. L. E.; FRANCO, A. A. D. A. M.; MAIA, T. F. Cuidado em saúde às populações rurais: perspectivas e práticas de agentes comunitários de saúde. **Physis: Revista de Saúde Coletiva**, v.30, n.3, e300332, 2020.

SOUZA, A. S.; NOGUEIRA, S. A. Estratégias de ensino-aprendizagem e adaptações metodológicas utilizadas pelos professores nas aulas de educação física para alunos com TEA. **Cenas Educacionais**, v.4, n.e11755, p.1-34, 2021.

VICARI, T.; LAGO, L. M.; BULGARELLI, A. F. Realidades das práticas da Estratégia Saúde da Família como forças instituintes do acesso aos serviços de saúde do SUS: uma perspectiva da Análise