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MATERNITY AND UNIVERSITY: STRESS IN STUDENTS OF AN INTERNATIONAL PUBLIC FEDERAL INSTITUTION

MATERNIDADE E UNIVERSIDADE: ESTRESSE EM ESTUDANTES DE UMA INSTITUIÇÃO PÚBLICA FEDERAL INTERNACIONAL

MATERNIDAD Y UNIVERSIDAD: ESTRÉS EN ESTUDIANTES DE UNA INSTITUCIÓN FEDERAL PÚBLICA INTERNACIONAL

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ABSTRACT

Pregnant women and mothers who are university students face unique barriers in balancing academic demands with childcare. This study aimed to investigate the signs, symptoms, and stages of stress in pregnant students and mothers at an international public federal university. This is an observational, cross-sectional study with a quantitative approach, conducted between 2018 and 2019 with pregnant and mother university students, both Brazilian and foreign. Data were collected using the Lipp's Stress Symptom Inventory for Adults (LSSI) and analyzed using the Epi Info software. Eighty-one university students participated in the study, of whom 50.6% were mothers, 43.2% were Brazilian, and 39.5% were Guinean. Signs and symptoms of stress were identified in 61.7% of the participants, being more frequent among pregnant women, corresponding to 70% of the group. Regarding the stages of stress, 57.1% of pregnant women were in a state of near exhaustion, while 72.2% of mothers were in a state of exhaustion. Physical symptoms predominated in 52.0% of the students, with 67.9% of pregnant women standing out. It is concluded that stress is a prevalent phenomenon among pregnant women and university mothers, highlighting the need for institutional support strategies that consider the specificities of these women.

KEYWORDS: *Stress. Motherhood. Pregnancy. Universities.*

RESUMO

Gestantes e mães universitárias enfrentam barreiras singulares ao conciliar as demandas acadêmicas com o cuidado dos filhos. Este estudo objetivou investigar os sinais, sintomas e fase do estresse de estudantes gestantes e mães de uma universidade pública federal de caráter internacional. Trata-se de um estudo observacional, transversal e de abordagem quantitativa, realizado entre 2018 e 2019 com universitárias gestantes e mães, brasileiras e estrangeiras. Os

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dados foram coletados através do Inventário de Sintomas de Estresse para Adultos de Lipp (ISSL) e analisados no programa Epi Info. Participaram do estudo 81 universitárias, das quais 50,6% eram mães, 43,2% brasileiras e 39,5% guineenses. Sinais e sintomas de estresse foram identificados em 61,7% das participantes, sendo mais frequentes entre gestantes, correspondendo a 70% do grupo. Quanto às fases do estresse, 57,1% das gestantes encontravam-se em quase exaustão, enquanto 72,2% das mães estavam na fase de exaustão. Os sintomas físicos predominaram em 52,0% das estudantes, com destaque para 67,9% das gestantes. Conclui-se que o estresse é um fenômeno prevalente entre gestantes e mães universitárias, evidenciando a necessidade de estratégias institucionais de suporte que considerem as especificidades dessas mulheres.

PALAVRAS-CHAVE: Estresse. Maternidade. Gravidez. Universidades.

RESUMEN

Las mujeres embarazadas y las madres universitarias se enfrentan a obstáculos únicos a la hora de conciliar las exigencias académicas con el cuidado de sus hijos. El objetivo de este estudio fue investigar los signos, síntomas y fase del estrés de las estudiantes embarazadas y madres de una universidad federal pública de carácter internacional. Se trata de un estudio observacional, transversal y de enfoque cuantitativo, realizado entre 2018 y 2019 con estudiantes universitarias embarazadas y madres, brasileñas y extranjeras. Los datos se recopilaron mediante el Inventario de Síntomas de Estrés para Adultos de Lipp (ISSL) y se analizaron en el programa Epi Info. Participaron en el estudio 81 universitarias, de las cuales el 50,6 % eran madres, el 43,2 % brasileñas y el 39,5 % guineanas. Se identificaron signos y síntomas de estrés en el 61,7 % de las participantes, siendo más frecuentes entre las embarazadas, que representaban el 70 % del grupo. En cuanto a las fases del estrés, el 57,1 % de las embarazadas se encontraban en estado de casi agotamiento, mientras que el 72,2 % de las madres se encontraban en fase de agotamiento. Los síntomas físicos predominaron en el 52,0 % de las estudiantes, destacando el 67,9 % de las embarazadas. Se concluye que el estrés es un fenómeno prevalente entre las embarazadas y las madres universitarias, lo que pone de manifiesto la necesidad de estrategias institucionales de apoyo que tengan en cuenta las especificidades de estas mujeres.

***PALABRAS CLAVE**: Estrés. Maternidad. Embarazo. Universidades.*

1. INTRODUCTION

The university environment is characterized as a space potentially prone to stress, due to the exposure of students to multiple factors, such as the need to adapt to a new social and academic context, family and social pressure, high workload, and demands related to academic performance (Esteban-Gonzalo *et al*., 2021). Among young university students, the adoption of risky sexual behaviors is also observed, which can result in unintended pregnancy, a condition often associated with high levels of stress (Phiri; Nyamaruze; Akintola, 2021; Ismael, 2023). This may be related to loneliness, emotional distress, and difficulty in disclosing the pregnancy (Baloyi *et al*., 2020).

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Pregnancy while attending university imposes challenges in addition to academic demands on young women. Aspirations such as professional training, access to quality education, and consolidation of personal independence are accompanied by extra responsibilities. Evidence also indicates that pregnant women and mothers who are students face unique barriers when reconciling studies and childcare, requiring significant reorganization of time, energy, and resources (Adams *et al*., 2023; Kakuru, 2022).

The gestational state itself already represents a potentially stressful condition. The transition of the social role associated with motherhood implies physiological, psychological, and social changes, which can increase vulnerability to stress (Kakuru, 2022; Mahlangu; Ramalepa; Letswalo, 2024). In the university context, these challenges are intensified by factors such as fear of family reaction to pregnancy, additional costs, social stigma, absence of a support network, and debilitating gestational symptoms, such as fatigue, nausea, and drowsiness (Phiri; Nyamaruze; Akintola, 2021; Modupe, 2023).

After childbirth, student mothers face the need to balance maternal responsibilities with academic demands. Many report a feeling of insufficiency in the fulfillment of both roles, with consequent stress and frustration (Yamamoto; D'Affonseca, 2024; Santos; Silva, 2024). This overload tends to worsen among those with financial difficulties and without family support, which often leads to early insertion in the labor market (Costa; Wall; da Paixão, 2023). The situation is aggravated by the insufficiency of institutional support policies, such as university daycare centers, early childhood education institutions, or adequate spaces for breastfeeding (Vieira; de Souza; Rocha, 2019; Costa; Wall; da Paixão, 2023; Nnadi; Nazim, 2024).

Chronic exposure to stress in these students compromises physical and mental health and is associated with adverse pregnancy outcomes, such as preterm birth, hypertensive disorders, and low birth weight (Lueth *et al*., 2022, Cardwell, 2013). In addition, persistent stress impairs learning, reduces academic performance, affects sleep quality, and increases the likelihood of substance use and school evasion (Pandey, 2020; Phiri; Nyamaruze; Akintola, 2021). High academic stress is a risk factor for depressive symptoms (Xu *et al*., 2018), which, in turn, are associated with greater anxiety and lower life satisfaction (Karaman; Nelson; Cavazos Vela, 2018).

In the Brazilian context, especially in institutions with an international focus, such as the University of International Integration of Afro-Brazilian Lusophony (Unilab), the presence of students from Portuguese-speaking African Countries (CPLP) highlights the intersection between academic mobility and global inequalities. These students face not only academic challenges but also the perception that they are merely passing through, due to the recognition that they will not

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remain in the country, as they have a predetermined period of stay that may be extended but will always end (Jorge; Silva; Almeida, 2022). This fact can contribute to racialization, invisibility, and institutional barriers that hinder their full integration and retention in higher education. These aspects underscore the need to understand the university experience of these young women through an intersectional lens that considers gender, motherhood, social origin, and geopolitical context.

This scenario may be further intensified when considering students from contexts marked by prior social vulnerability, as is the case of those from countries such as Angola and Guinea-Bissau, who often bring experiences related to poverty, economic instability, and limited access to basic services, including education and health (Hodges, 2023). In the Portuguese-speaking African Countries (PALOP), structural inequalities persist related to low state investment capacity, institutional precariousness, and difficulties in consolidating robust educational systems (Doutor, 2024). These factors directly influence educational trajectories and opportunities for social mobility. Such conditions can affect how these students face the challenges of university life in another country, especially when associated with motherhood.

These conditions can be understood in light of the Social Determinants of Health (SDH), which recognize that structural factors—such as socioeconomic context, access to public policies, and historical inequalities—directly influence exposure to stressors and health outcomes (Fagundes; Wu-Chung; Christian, 2022). For students on international mobility programs, these determinants interact with additional challenges related to displacement, cultural adaptation (Gebregergis; Csukonyi, 2025), and weakened support networks (Lokmic-Tomkis; Tanner; Warren, 2022).

In addition to structural and cultural barriers, the student retention of these young women is intrinsically linked to material and symbolic conditions. In this context, permanence may not be limited to access to financial resources but may also involve subjective aspects such as belonging, recognition, and institutional support (Deuchar, 2022). For student mothers and pregnant women, these dimensions take on even greater relevance, since the overload of roles — student, caregiver, and, often, provider — can intensify situations of stress and psychosocial vulnerability (Bustillo; Bustillo; Sayson, 2024).

Upon entering Brazilian institutions, these students encounter multiple integration barriers that go beyond the academic dimension. The study points to difficulties related to linguistic adaptation (variations in Portuguese), cultural differences, dietary changes, and understanding of the Brazilian educational system, as well as feelings of isolation and social exclusion (Bezerra; Alves, 2022; Cunha et al., 2017). Among Guinean students, for example, challenges are evident

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that span both academic and personal spheres, including intercultural integration processes and coping with inequalities experienced before and during mobility (Doutor, 2024). These factors can be exacerbated in vulnerable contexts, such as in the case of pregnant students or mothers, who accumulate caregiving responsibilities.

Despite advances in research on academic stress and motherhood in higher education, studies investigating these experiences among international mobility students, particularly those from Portuguese-speaking African countries, remain scarce. The overlapping vulnerabilities—related to gender, motherhood, student status, and migratory context—can significantly intensify exposure to stress and its impacts, representing an important but still largely unexplored field of research.

Thus, considering the need to understand the stress experienced by pregnant women and mothers in university, in order to contribute to the planning of strategies and actions aimed at mitigating stress in the university environment, as well as in the establishment of continuous and effective health care, this study aimed to investigate the signs, symptoms and phase of stress of pregnant students and mothers at an international public federal university.

2. METHODS

Design

This study was characterized as observational, cross-sectional, and of a quantitative approach, with Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) as a guiding tool.

Participants

Took part in the study pregnant students and mothers, Brazilian and international, from African countries, members of the Community of Portuguese Language Countries (CPLP, in Portuguese). All were undergraduate students of in-person courses at an international public federal university in Brazil (institutional data, blinded for review), in the academic periods of 2018.2, 2019.1 and 2019.2. Due to the number of students that fit the research profile, as informed by the Dean of Undergraduate Studies (PROGRAD), the census was chosen. However, the total number of participants was greater than 75, since, during the study, other university students became pregnant.

Were included in the research pregnant women, in any gestational period, and mothers with completed maternity leave duly enrolled in in-person undergraduate courses at an international public federal university in Brazil (institutional data, blinded for review). Although not

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applied, an exclusion criterion was instituted for mothers whose children were under the responsibility of third parties, a fact that could interfere with stress levels.

Research Tools

Initially, the participants answered a questionnaire containing questions regarding sociodemographic and economic aspects, course and time until graduation, and lifestyle habits (smoking and alcohol consumption).

As stress assessment, Lipp's Stress Symptom Inventory for Adults (LSSI) was used (Lipp; Lipp, 2019). This tool identifies the presence of stress and somatic or psychological symptoms. The stress quadrilateral, represented by alertness, resistance, near exhaustion, and exhaustion, was adopted to identify the stress phase. The answers were analyzed by a psychologist trained for this type of evaluation.

Importantly, none of the authors of this study are the developers of the LSSI, and the psychologist responsible for the analysis has no authorship relationship with the instrument, ensuring the preservation of the blind review process.

The LSSI consists of three tables, which comprise the four phases of stress, identified by table 01 (alert phase) – with symptoms in the last 24 hours –, table 02 (resistance and near exhaustion phase) – with symptoms in the last week. A positive diagnosis is given based on the sum of the symptoms of each table in the inventory. When the threshold number is exceeded in a specific phase, the occurrence of stress and its phase are indicated: table 01 > 6 symptoms indicate alarm phase; table 02 > 3 symptoms indicate resistance phase, or table 02 > 9 symptoms indicate near exhaustion phase; and table 03 > 8 symptoms indicate exhaustion phase (Alves *et al*., 2011).

Data Collection Procedure

Data collection took place from November 2018 to August 2019, at an international public federal university in Brazil (institutional data, blinded for review) located in northeastern Brazil, across two campuses.

The project was introduced to students in the classroom and, once participation was accepted, the Free and Informed Consent Form (FICF) was signed, followed by the application of the research tools. Regarding absent students, contact was established via e-mail or telephone, with the objective of scheduling an in-person meeting.

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Data Analysis Procedure

The data obtained were organized in a spreadsheet using Excel for Windows, version 2010, and analyzed using the software Epi Info™ for Windows, version 7.2.1.0. For descriptive analysis, relative and absolute frequencies were used for categorical variables, and for quantitative variables, the findings were expressed as mean and standard deviation.

Ethical Procedures

The project was submitted for appreciation by the Research Ethics Committee of an international public federal university in Brazil (institutional data, blinded for review), having been approved, according to the Certificate of Presentation for Ethical Appreciation (CAAE) 89797518.7.0000.5576 and the opinion 2.932.282. The autonomy of the subjects, non-maleficence and beneficence of the research, prescribed in Resolution 466/12 of the National Health Council, were guaranteed.

3. RESULTS

The sample of this study included 81 university students, with a mean age of 26.4 (±3.8) years. Among the women surveyed, 41 (50.6%), 68 (84.0%), and 65 (80.2%) were mothers, reported having a partner, and had an income of less than 1 minimum wage, respectively. Regarding nationality, the students came mainly from Brazil (n = 35; 43.2%) and Guinea-Bissau (n = 32; 39.5%). Concerning type and time of the course, the participants were particularly undergraduate Nursing students (n = 23; 28.4%) and at the beginning of the course (n = 37; 45.7%) (Table 1)

As for lifestyle habits, only two participants (2.5%) smoked, with a frequency of twice a week. In addition, nine (11.1%) students drank alcoholic beverages one to two times a week, with an average amount of 10.1 (±4.9) drinks/week (Table 1).

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Table 1. Sociodemographic and economic characteristics and lifestyle habits of university pregnant women and mothers. Redenção – Ceará, 2019

Variables		
Age (in years) Mean	26.4 (±3.8)	
Participants' situation		
Pregnant women	40	49.4
Mothers	41	50.6
Nationality		
Brazilian	35	43.2
Foreign	46*	56.8*
Marital status		
With partner	68	84.0
Without partner	13	16.0
Household income		
≤1 minimum wage	65	80.2
>1 minimum wage	16	19.8
Course		
Administration	15	18.5
Agronomy	02	02.5
Anthropology	07	08.6
Biological Sciences	08	09.9
Nursing	23	28.4
Languages	15	18.5
Pedagogy	08	09.9
Sociology	03	03.7
Course time		
Beginning	37	45.7
Middle	26	32.1
End	18	22.2
Tobacco use		
Yes	02	02.5
No	79	97.5
Alcohol consumption		
Yes	09	11.1
No	72	88.9

Note. * Guinea-Bissau (n = 32; 39.5%); Mozambique (n = 06; 7.4%); São Tomé and Príncipe (n = 04; 4.9%); Cape Verde (n = 03; 3.7%); and Angola (n = 01; 1.2%).Source: Research data (2019).

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Regarding stress, 61.7% (n = 50) of the participants experienced this type of condition, especially the group consisting only of pregnant women (n = 28, 70.0%). Concerning the stress phase, the results showed that, in the group of pregnant women, 16 (57.1%) were in the phase of near exhaustion, while in the groups of mothers and pregnant women and mothers, 16 (72.2%) and 28 (56.0%) participants were in the phase of exhaustion, respectively. Regarding the types of symptoms, there was a predominance of physical symptoms among the pregnant women and the group of pregnant women and mothers, and psychological symptoms among the mothers (Table 2).

Table 2. Presence, phase, and types of stress-related symptoms of university pregnant women and mothers. Redenção, CE, Brazil, 2019

Variables	**Pregnant women n (%)**	**Mothers n (%)**	**Pregnant women and mothers n (%)**
Signs and symptoms of stress			
Yes	28 (70.0%)	22 (53.7%)	50 (61.7%)
No	12 (30.0%)	19 (46.3%)	31 (38.3%)
Stress phase			
Near exhaustion	16 (57.1%)	06 (27.3%)	22 (44.0%)
Exhaustion	12 (42.9%)	16 (72.2%)	28 (56.0%)
Predominant symptom of stress			
Physical	19 (67.9%)	07 (31.8%)	26 (52.0%)
Psychological	09 (31.1%)	15 (68.2%)	24 (48.0%)

Source: Research data (2019).

4. DISCUSSION

This study, by investigating the signs, symptoms and stress phase of pregnant women and mothers in university, may provide strategies aimed at coping with this reality, which may involve everything from the prevention of physical complications and promotion of mental health to self-care and maternal-child well-being and bonding. Specifically for the university, it can institute means that strengthen academic and social support, establish a balance between motherhood and student life, and prevent school evasion.

In terms of results, the participants' mean age of 26.4 (±3.8) years associated with almost half of them being in the beginning of the undergraduate course and more than 50% of them

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being mothers suggest a late entry into the university and/or a compromise in academic activities. These hypotheses can be grounded on the average age presented by undergraduates in Brazilian Federal Institutions of Higher Education (IFES) (National Forum of Pro-Rectors and Student Affairs (Fórum Nacional de Pró-Reitores de Assuntos Comunitários e Estudantis – FONAPRACE, 2019) and on the difficulty in reconciling maternal demands with the obligations of the university (Silva *et al*., 2020).

Concerning marital status, the high number of pregnant women and mothers who had a partner reinforces the importance that partners exert in emotional and psychological support (Neves; Coelho; Ferreira, 2024; Lempke *et al*., 2023), prenatal care (Silva *et al*., 2024), women's physical health, strengthening family bonds (Lempke *et al*., 2023), and financial support (Antloga *et al*., 2023).

As for income below 1 minimum wage, a lower value than that recorded among university students in the V National Survey of the Profile of IFES Undergraduates – 2018 (FONAPRACE, 2019), it may be a reflection of the relative economic development of the municipalities of the Baturité Massif. According to Braga and Campos (Braga; Campos, 2022), this region had the lowest average Relative Development Index among the other planning regions in the state of Ceará. Added to this scenario are the conditions of poverty in African countries (Salla *et al*., 2019; Marrengula; Siúta; Tembo, 2024; Cangue, 2020), whose students participated in this study.

The greater involvement of Nursing students may be related to the fact that the project was conducted by a nurse, facilitating access to them. When analyzing the nationality of university students, the greater number of Brazilians and Guineans was not unexpected, since these two nationalities are the most numerous among students at an international public federal university in Brazil (institutional data, blinded for review) (Institutional report., 2018).

Regarding the low percentage of alcohol and tobacco consumption, although these habits are common among university students (Pinho *et al*., 2020; Ramalho; de Albuquerque, 2021), the findings of this study may reflect the fact that the participants were not only academics, but mothers and pregnant women. This hypothesis is supported by Rigo *et al*. (2020), who highlight that concern with the health of the fetus during pregnancy, as well as the subsequent care of the child, significantly influences the non-adherence to such practices by pregnant women and mothers.

As for the stress observed in all participants, in addition to the aforementioned assumptions, it may be related to the numerous physical and psychological changes and concerns surrounding the gestational period and motherhood (Kiyak, 2024). In fact, at these stages of a woman's life, she is susceptible to body and mood changes, lower sleep quality,

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changes in eating patterns, reorganization of daily activities, and baby care (Orchard *et al.*, 2023), situations capable of triggering stress.

When the stress phase of the participants was investigated, the fact that the pregnant women fit into the stage of near exhaustion was worrisome, since, in this condition, the individual is not able to adapt or resist the stressor, being susceptible to the development of diseases, reduced productivity, and the presence of apathy (Engidaw; Mekonnen; Amogne, 2019; Saur; dos Santos, 2021).

As for the group consisting of mothers, the situation was more alarming because most of them were in the exhaustion phase. This is characterized by difficulty in coping with daily problems and pressures, the appearance of diseases (such as depression, ulcers, and dermatological problems), and changes in productivity at work and in social and affective relationships (Lipp, Malagris, 1995; Gebhardt *et al.*, 2021).

Regarding the analysis of stress symptoms, the predominance of physical symptoms among pregnant women can be more easily understood based on the physiological changes inherent to pregnancy. According to Lipp and Lipp (2019), these symptoms range from increased sweating, nausea, and cold hands and feet to muscle tension, tachycardia, and hypertension. Concerning the symptoms presented by the mothers, in addition to the physical symptoms, which could be seen in the group composed of pregnant women and mothers, the psychological symptoms stood out. These involve anxiety, tension, anguish, excessive worry, depression, and others (Lipp; Lipp, 2019). This result may be linked to the accentuated demand of care required by the baby, in addition to the commitment to reconcile personal and academic life.

In terms of study limitations, the findings obtained here did not allow an investigation of the signs, symptoms, and stress phase of the participants according to their nationalities.

5. CONCLUSION

It was concluded that, although the participants had a partner, were not smokers and did not consume alcoholic beverages, they experienced stress, particularly pregnant women. These were in the phase of near exhaustion, presenting mainly physical symptoms. Regarding the mothers, they experienced stress in their exhaustion phase, especially exhibiting psychological symptoms.

These findings can contribute to the development of research aimed at investigating risk and protective factors capable of preventing health problems in the gestational and maternal-child spheres. In addition, these studies can favor the academic permanence and personal development of pregnant women and mothers.

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REFERENCES

ADAMS, M.; LONGMUIR, F.; FERNANDES, V.; ALMEIDA, S. C.; LI, L. The kitchen table: mother-academics reconfiguring their emerging identities while aligning family and work. In: RESEARCH and teaching in a pandemic world: the challenges of establishing academic identities during times of crisis. Singapore: Springer Nature, 2023. p. 343–358.

ALVES, P. C.; AMÉRICO, C. F.; FERNANDES, A. F. C.; BRAGA, V. A. B. Identificação do estresse e sintomatologia presente em mulheres mastectomizadas. Rev Rene, v. 12, n. 2, p. 351-357, 2011.

ANTLOGA, C. S.; MONTEIRO, R. A.; BENTES, A. M.; CASSIMIRO, Ê. C.; ASSUNÇÃO, F. D. S. Percepção de danos físicos, psíquicos e sociais no trabalho de ser mãe universitária. Psicologia: Ciência e Profissão, v. 43, e253141, 2023.

BALOYI, V.; MAVHANDU-MUDZUSI, A. H.; MUKHUBA, T.; MAKHUBELE, J. An exploration of the causes of student pregnancy and psychological stressors experienced by pregnant students at the University of Venda, South Africa. Cogent Psychology, v. 7, n. 1, 2020.

BEZERRA, J. B.; ALVES, H. C. Na EKO na EBA - o vai e vem da imigração: cotidiano, identidade e demandas de imigrantes africanos estudantes universitários. Cadernos Brasileiros de Terapia Ocupacional, v. 30, e3073, 2022.

BRAGA, F. L. P.; CAMPOS, K. C. Análise espacial do desenvolvimento econômico relativo da região do Maciço de Baturité, Ceará. Revista Brasileira de Planejamento e Desenvolvimento, v. 11, n. 1, p. 149–180, 2022.

BUSTILLO, R. C. T.; BUSTILLO, R. C. T.; SAYSON, J. A. V. Navigation the dual roles: understanding the unique chellenges of student-mothers in pursuit of higher education. Ignatian International Journal for Multidisciplinary Research, v. 2, n. 2, p. 58–69, 2024.

CANGUE, J. Exclusão social e pobreza na qualidade de ensino: estudo de caso no ensino primário em Angola. Revista Educação, Pesquisa e Inclusão, v. 1, p. 169–182, 2020.

CARDWELL, M. S. Stress: pregnancy considerations. Obstetrical and Gynecological Survey, v. 68, n. 2, p. 119–129, 2013.

COSTA, J. L. S.; WALL, M. L.; PAIXÃO, T. T. Desafios da maternidade no período acadêmico: revisão integrativa. Revista Família, Ciclos de Vida e Saúde no Contexto Social, v. 11, n. 1, e6226, 2023.

CUNHA, M. I.; VOLPATO, G.; ROCHA, M. A. M.; PINTO, M. M. Estudantes africanos em universidades brasileiras: os desafios da internacionalização “às avessas” no cotidiano universitário. Educação (Porto Alegre), v. 40, n. 3, p. 469–480, 2017

DEUCHAR, A. The problem with international students' ‘experiences’ and the promise of their practices: Reanimating research about international students in higher education. British Educational Research Journal, v. 48, p. 504–518, 2022.

DOUTOR, C. Estudantes guineenses no ensino superior em Portugal: barreiras e recomendações. Revista Interdisciplinar da Mobilidade Humana, v. 32, e321848, 2024.

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ENGIDAW, N. A.; MEKONNEN, A. G.; AMOGNE, F. K. Perceived stress and its associated factors among pregnant women in Bale Zone Hospitals, Southeast Ethiopia: a cross-sectional study. BMC Research Notes, v. 12, n. 1, p. 356, 2019.

ESTEBAN-GONZALO, S.; GONZÁLEZ-PASCUAL, J. L.; GIL-DEL SOL, M.; ESTEBAN-GONZALO, L. Exploring new tendencies of gender and health in university students. Archives of Women's Mental Health, v. 24, n. 3, p. 445–454, 2021.

FAGUNDES, C. P.; WU-CHUNG, E. L.; CHRISTIAN, L. M. Special Issue: Social Determinants of Health: What we still need to know. Psychoneuroendocrinology, v. 140, 2022.

FÓRUM NACIONAL DE PRÓ-REITORES DE ASSUNTOS COMUNITÁRIOS E ESTUDANTIS (FONAPRACE). V Pesquisa nacional de perfil socioeconômico e cultural dos(as) graduandos(as) das IFES – 2018. Brasília: FONAPRACE, 2019.

GEBHARDT, A.; LANGIUS-EKLÖF, A.; ANDERMO, S.; ARMAN, M. Health and suffering are associated with social support: a cross-sectional study. BMC Women's Health, v. 21, n. 1, p. 259, 2021.

GEBREGERGIS, W. T.; CSUKONYI, C. A systematic review of personal and situational factors associated with intercultural adaptation of international students: Unravelling the resources and demands. International Journal of Intercultural Relations, v. 108, 2025.

HODGES, A. O desenvolvimento da proteção social na África Subsariana. Oxford: Oxford Policy Management, 20 jan. 2023.

INSTITUTIONAL REPORT. University in numbers. [S.l.: s.n.], 2018.

ISMAEL, M. E. The psychosocial experiences of unintended pregnancies among university students: a case of University of Dar es Salaam female students. Tanzania Journal of Sociology, v. 9, n. 2, p. 84–103, 2023.

JORGE, L. S.; SILVA, C. C.; ALMEIDA, L. S. Construindo uma universidade internacionalizada: um estudo sobre a permanência estudantil na universidade da Integração Internacional da Lusofonia Afro-Brasileira (UNILAB). Revista Teias, v. 23, n. 69, p. 204–217, 2022.

KAKURU, D. M. Navigating student motherhood in a precarious urban context: perspectives from higher education in Uganda. Education and Urban Society, v. 54, n. 6, p. 731–749, 2022.

KARAMAN, M. A.; NELSON, K. M.; CAVAZOS VELA, J. The mediating effects of achievement motivation and locus of control between academic stress and life satisfaction in undergraduate students. British Journal of Guidance & Counselling, v. 46, n. 4, p. 375–384, 2018.

KIYAK, S. The relationship of depression, anxiety, and stress with pregnancy symptoms and coping styles in pregnant women. Midwifery, v. 136, 104103, 2024.

LEMPKE, T. M. C.; SURUÍ, A. H. P.; COITINHO, L. L.; RAMOS, E. F. A participação do pai/parceiro no pré-natal e o fortalecimento da saúde do trinômio mãe-pai-filho. Brazilian Journal of Implantology and Health Sciences, v. 5, n. 4, p. 2292–2303, 2023.

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LIPP, M. E. N.; MALAGRIS, L. N. Manejo do estresse. In: Psicoterapia comportamental e cognitiva: pesquisa, prática, aplicações e problemas. São Paulo: [s.n.], 1995. p. 279–292.

LIPP, M. N.; LIPP, L. M. N. Proposal for a four-phase stress model. Psychology, v. 10, n. 11, p. 1435, 2019.

LOKMIC-TAMKINS, Z.; TANNER, C.; WARREN, N. Supporting pregnant nursing students in graduate entry-to-practice nursing programs: A case study. Nurse Education Today, v. 116, 2022.

LUETH, A. J. et al. Allostatic load and adverse pregnancy outcomes. Obstetrics & Gynecology, v. 140, n. 6, p. 974–982, 2022.

MAHLANGU, M. E.; RAMALEPA, T. N.; LETSWALO, L. O. Experiences of pregnant and parenting students at a university in Gauteng Province. Health SA Gesondheid, v. 29, a2297, 2024.

MARRANGULA, C.; SIÚTA, M.; TEMBO, Y. A armadilha da pobreza e as políticas de protecção social em Moçambique. In: Desafios para Moçambique: 2023–2024. Maputo: Instituto de Estudos Sociais e Económicos, 2024. p. 233–263.

MODUPE, F. Pregnancy and early motherhood: learning experiences of female undergraduates of a Nigerian university. International Journal of Contemporary Applied Researches, v. 1, n. 10, 2023.

NEVES, B. I. S.; COELHO, M. D. C. B.; FERREIRA, L. S. Percepção das gestantes sobre o suporte emocional proporcionado pela presença da figura familiar na sala de parto: revisão de literatura.
Revista Liberum Accessum, v. 16, n. 2, p. 167–185, 2024.

NNADI, I. L.; NAZIM, A. Ö. Student mothers: experiences of young mothers studying at university. Kadın/Woman 2000, v. 25, n. 2, p. 63–82, 2024.

ORCHARD, E. R.; RUTHERFORD, H. J.; HOLMES, A. J.; JAMADAR, S. D. Matrescence: lifetime impact of motherhood on cognition and the brain. Trends in Cognitive Sciences, v. 27, n. 3, p. 302–316, 2023.

PANDEY, D. L. Work stress and employee performance. International Research Journal of Human Resource and Social Sciences, v. 7, n. 5, p. 124–135, 2020.

PHIRI, T. M.; NYAMARUZE, P.; AKINTOLA, O. Stress and coping among unmarried pregnant university students in South Africa. BMC Pregnancy and Childbirth, v. 21, n. 1, p. 817, 2021.

PINHO, M. C.; SOUZA, R. C. F.; PORTUGAL, F. B.; SIQUEIRA, M. M. Uso de álcool e tabaco entre universitários. SMAD, Revista Eletrônica Saúde Mental Álcool e Drogas, v. 16, n. 1, p. 1–12, 2020.

RAMALHO, A. A.; ALBUQUERQUE, R. N. O uso de álcool e outras drogas entre estudantes universitários brasileiros. Comunicação em Ciências da Saúde, v. 32, n. 2, 2021.

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RIGO, F. L. et al. Prevalência e fatores associados ao uso de álcool, tabaco e outras drogas em gestantes. Revista Médica de Minas Gerais, v. 30, e-1325, 2020.

SALLA, M. R.; SÁ, E.; FERREIRA, P. A. S. C.; MELO, N. A. D. Relação entre saneamento básico e saúde pública em Bissau, Guiné-Bissau. Saúde e Sociedade, v. 28, p. 284–296, 2019.

SANTOS, L. D.; SILVA, M. K. Neurociência de mães-pesquisadoras: maternidade e saúde mental na carreira acadêmica. In: IV Simpósio Brasileiro sobre Maternidade e Ciência. Rio de Janeiro, 2024.

SAUR, A. M.; SANTOS, M. A. Risk factors associated with stress symptoms during pregnancy and postpartum. Women & Health, v. 61, n. 7, p. 651–667, 2021.

SILVA, J. S. et al. A maternidade na trajetória universitária. Brazilian Journal of Development, v. 6, n. 7, p. 42538–42550, 2020.

SILVA, N. H. P.; SILVA NETO, E. G.; LIRA, M.; SOUSA, A. C. A participação do parceiro no acompanhamento da assistência pré-natal. Revista Ibero-Americana de Humanidades, Ciências e Educação, v. 10, n. 11, p. 4319–4332, 2024.

VIEIRA, A. C.; SOUZA, P. B. M.; ROCHA, D. S. P. Vivências da maternidade durante a graduação: uma revisão sistemática. Revista Cocar, v. 13, n. 25, p. 532–552, 2019.

XU, H. et al. Sexual attitudes, sexual behaviors, and use of HIV prevention services among male undergraduate students in China. BMC Public Health, v. 19, n. 1, 2018.

YAMAMOTO, C. N.; D'AFFONSECA, S. M. Suporte social e estresse parental em mães universitárias. In: IV Simpósio Brasileiro sobre Maternidade e Ciência. Rio de Janeiro, 2024.

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