

1 **Ergonomic and Psychosocial Hazards among Embryologists in IVF Laboratories in Abuja,**
2 **Nigeria: A Cross-Sectional Study.**

3 **Abstract**

4 **Background:** Embryologists working in In-vitro fertilization (IVF) laboratories are at risk for
5 occupational health problems related to their long hours in laboratories, limited work
6 environments, and the high demands of the work setting. In low- and middle-income settings
7 such as Nigeria, there is limited empirical evidence regarding ergonomic and psychosocial
8 hazards found in this healthcare workforce.

9 **Objective:** To determine the prevalence of ergonomic and psychosocial hazards among the
10 embryologists in IVF laboratories in Abuja, Nigeria and to assess the perceived effectiveness of
11 the ergonomic and organisational measures in place in reducing musculoskeletal complaints and
12 work-related psychological stress.

13 **Methods:** A descriptive cross-sectional study was carried out among embryologists and
14 laboratory personnel working in registered IVF clinics in Abuja. Data were obtained with the
15 help of the structured questionnaire using the ergonomic symptoms, any psychosocial stressors,
16 workstation design, organisational system practices, and perceived adequacy of safety and
17 support measures in the workstation. Descriptive statistics were used to summarize the
18 prevalence of hazards. Chi-square tests were used to investigate links relating ergonomic design
19 to reported complaints and ordinary least squares regression was used to determine predictors of
20 psychological stress.

21 **Results:** Common ergonomic complaints included standing or sitting for long periods of time
22 (63.4%), eye strain (48.8%), and back pain (46.3%). Only 51.2% of respondents said
23 workstations supported proper ergonomic posture. Psychological stress was also frequently
24 reported, noting long working hours, poor communication and lack of breaks as significant
25 predictive factors of stress ($p < 0.01$). Although more than half of the respondents showed
26 satisfaction with the existing safety measures, perceived adequacy of safety measures showed a
27 significant association with ergonomic design but not with reduced psychological stress.

28 **Conclusion:** Embryologists in IVF laboratories in Abuja face some significant ergonomic and
29 psychosocial health challenges. Organisational factors are critical in psychological stress and
30 suggest that developments in equipment and infrastructure are not enough to enhance
31 psychological stress levels, unless this is supported by workload management and organisational
32 practices. Strengthening occupational health strategies among IVF services is crucial in order to
33 benefit workforce well-being.

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35 **Keywords:** Embryologists, In vitro Fertilisation, Ergonomic hazards, Psychosocial stress,
36 Laboratories, Nigeria

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