

## Perceived stress and resilience in undergraduate pharmacy students: sex results and differences

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### Abstract

Stress at work, vulnerability to stress, job failure, chronic fatigue, anxiety, neuroticism and extraversion, self-concept, seem to be accompanied by significant emotional discomfort and may increase the likelihood of the individual developing behavioral changes. In this context, we aim to analyze the perceived stress, resilience and its possible correlation, considering the sex, in volunteers from undergraduate students of pharmacy course in Unicamp. We conclude that women are more stressed and less resilient because they spend more time in the stressful situation trying to solve it, not trying to avoid it. There was an inverse correlation between stress scores and resilience scores in women.

### Key words:

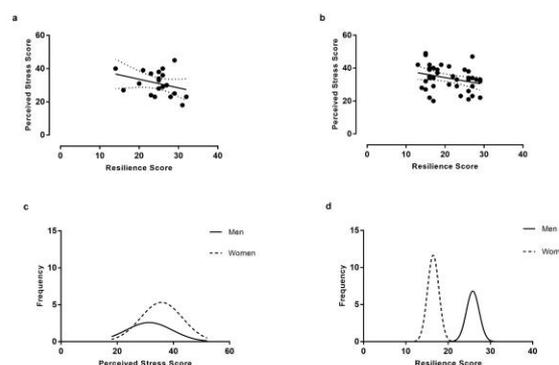
Perceived Stress, resilience, undergraduate students.

### Introduction

The psychosocial stress is used to refer to a wide variety of psychological and social factors that relate to health and mental illness<sup>1</sup>. Psychological factors are considered to pose risks to the maintenance of mental health, behavior, and emotion. Stress at work, vulnerability to stress, job failure, chronic fatigue, anxiety, neuroticism and extraversion, self-concept, seem to be accompanied by significant emotional discomfort and may increase the likelihood of the individual developing behavioral changes<sup>2</sup>. In this context, we aim to analyze the perceived stress, resilience and its possible correlation, considering the sex, in volunteers from undergraduate students of pharmacy course in Unicamp.

### Results and Discussion

The project is approved by the Ethics Committee of Unicamp under the number CAAE 60640416.0.0000.5404. The subjects (men = 25; women = 50) are from pharmacy undergraduate course between de 1<sup>st</sup> and 4<sup>th</sup> year. The Sheldon-Cohen Perceived Stress Scale<sup>3</sup> with 14 items was applied to investigate psychosocial stress and the Connor-Davidson Resilience Scale<sup>4</sup> with 10 items was applied to investigate the resilience, both in their Brazilian versions. We use GraphPad Prism 7 for statistical analyzes and figures. The normality was confirmed by D'Agostino & Pearson test and then we performed Pearson correlation test for normal data and Spearman correlation test for non-normal data. Differences were considered significant for  $p < 0.05$ . The volunteers of this pilot study had a stress score of  $33.59 \pm 7.46$  and a resilience of  $22.44 \pm 0.61$ , previously published by da Silva *et al.* from our laboratory<sup>5</sup>. When the results are divided by sex, we observed a negative correlation between stress and resilience in women, while in men there was no significant correlation (Figure 1A/1B). Moreover, we observed that women ( $34.76 \pm 7.452$ ) have a higher stress score than men ( $31.24 \pm 7.049$ ) and lower scores for resilience ( $21.07 \pm 5.242$ ) than men ( $24.75 \pm 4.494$ ) (Figure 1C/1D).



**Figure 1.** A) Correlation between perceived stress and resilience in men, no significant ( $n=20$ ,  $r=-0.32$ ,  $p=0.1690$ ); B) Correlation between perceived stress and resilience in women, significant ( $n=42$ ,  $r=-0.3191$ ,  $p=0.0394$ ); C) Gaussian curve for perceived stress score (women= $35.77 \pm 7.472$  and men= $31.37 \pm 8.22$ ); D) Gaussian curve for resilience score (women= $16.48 \pm 1.343$  and men= $25.83 \pm 1.514$ ).

### Conclusions

Previous studies state that women in stressful situations tend to join other women to seek a way to circumvent the problem, while men act in an individualized way by acting "primitively" according to the fight-and-flight theory, fleeing from the stressful situation<sup>6</sup>. Thereby, women from our population are more stressed and less resilient by staying in the stressful situation longer trying to solve it, not by trying to avoid it. Coping studies will supplement this statement.

### Acknowledgement

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