



RESEARCH ARTICLE

ASSOCIATION OF BENIGN BREAST DISORDERS, LEVEL OF EDUCATION, AND EMPLOYMENT

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ABSTRACT

We retrospectively reviewed records of women attending our breast clinic to assess the association of benign breast disorders with education level and employment status. Overall, 229 cases consisting of those with breast pain, fibrocystic changes, or non-pathologic nipple discharge were compared with 217 controls. Benign breast disorders were non-significantly more frequent in employed than unemployed women but significantly more frequent in women with higher education. To our knowledge, no previous work has investigated the association of employment and education with benign breast disorders; we believe that this should be further studied in larger studies.

**Key words:**

Benign- Breast- Education- Employment.

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INTRODUCTION

While completing a research investigating the association of benign breast disorders (BBDs) with thyroid hypofunction, we realized that whereas the overall proportion of women with low education levels and housewives attending the clinic for different reasons was relatively high, higher educated women and those employed complained more frequently of symptoms of BBD. Considering that more than half of women complaining of breast symptoms are affected by BBDs (Dawson *et al.*, 1993) and the distressing nature of the symptoms (Steffens *et al.*, 2011), we retrospectively reviewed the records of the study to investigate the association of BBD with education level and employment status.

METHODS

Participants had been selected among women attending our breast clinic in Arash Women's Hospital, a university hospital in Tehran, Iran. The BBD group (Case group) consisted of those who had tolerable or disabling breast pain, clinically-, ultrasonographically- or histologically-detected fibrocystic changes (FCC), and troublesome non-pathologic nipple discharge. The control group was selected among women who had attended the clinic for "a checkup" or opportunistic screening without any breast symptom, were not under treatment for thyroid disease, and had normal breast clinical

exam and breast ultrasonography as well as normal mammography if  $\geq 40$  years. Exclusion criteria consisted of breast cancer, pregnancy, consumption of oral contraceptives, and solid or large cystic breast masses. Data regarding employment status and level of education had been recorded for nearly all participants, these were accordingly classified as employed or housewife (non-employed) regarding their employment status; and as less than high school graduate (primary or high school educated but not graduated from high school), high school graduate, and college graduate in regard to their education level.

RESULTS AND DISCUSSION

Overall, 446 women were entered in the study, including 229 cases and 217 controls. The mean age was  $46.4 \pm 10$  years in the control and  $40.2 \pm 9$  years in the case group. Numbers of participants in subgroups of studied characteristics are demonstrated in Table 1.

As seen in the table, while BBD was more frequent in employed than unemployed women, the difference was not significant ( $p=0.118$ ). Nevertheless, these disorders were significantly more frequent in women with higher education ( $p=0.034$ ). There may be different explanations for the latter. We previously believed that this was due to higher levels of stress and anxiety caused by shortage of time and plenty of works in this group, but if this was the case, BBDs should have been also obviously more frequent in employed women. One issue is that higher

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Table 1. Employment status and education levels in BBD and control groups

Characteristics		Total No (percent)	BBD <sup>a</sup> No (percent)	Control No (percent)	P value
Employment	Employed	52 (11.7%)	32 (14.0%)	20 (9.2%)	0.118
	Housewife	394 (88.3%)	197 (86.0%)	197 (90.8%)	
Education level	< HS <sup>**</sup>	186 (41.7%)	82 (35.8%)	104 (47.9%)	0.034
	HS <sup>**</sup> graduate	173 (38.8%)	97 (42.4%)	76 (35.0%)	
	College <sup>***</sup>	87 (19.5%)	50 (21.8%)	37 (17.1%)	

\*BBD=Benign Breast Disorder, \*\*HS=high school, \*\*\*College student or graduated

education probably leads to superior awareness about disease symptoms and earlier reference to pertinent medical centers. However, when not related to fields of medical science, higher education may be misleading in that less-significant symptoms may appear very dangerous to the patient. For that reason, because of the concern and worry induced by symptoms of BBD in women (Andrykowski *et al.*, 2002; Blow *et al.*, 2011), it seems necessary to have some basic instructions about the subject in these groups so that they become alert about the real importance of symptoms. To our knowledge, no previous work has investigated the association of employment and education with BBD. We believe that this should be further studied in larger studies, evaluating the role of stress and tension on the higher frequency of BBD in higher-educated women, as well as the effect of disease and symptom awareness on attending relevant clinics.

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