Breast size, thoracic kyphosis, and thoracic spine pain: a correlational survey of Nigerian postpartum mothers

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Summary

Thoracic spine postural dysfunctions are common postpartum-related health problems. This correlational survey explored the relationship between breast size, thoracic-kyphosis, and spine pain among 400 postpartum women. Data were collected using a measuring tape(cm), inclinometer, and Revised Oswestry thoracic spine pain disability questionnaire. The majority of the participants fall under the category of breast cup size B(61.75%), have no history of thoracic spine pain(87.4%), and have normal thoracic spine posture(50.2%). Breast size was only significantly correlated with thoracic-kyphosis (r=0.162, p=0.001) but not with thoracic spine pain. Postural education/care around adequate support of the breast with suitable brassieres may help prevent kyphotic deformities.

Introduction

Thoracic spine postural dysfunctions are common postpartum-related health problems, compromising breastfeeding efficacy and quality of life among women. Previous studies have particularly associated these conditions with increased breast sizes in several populations [1,2]. However, such empirical evidence is scarce in the Nigerian population. This study investigated the relationship between breast size, thoracic-kyphosis, and -spine pain among postpartum Nigerian women.

Methods

This correlational survey involved 400 consenting postpartum mothers (between 0-24 months of postpartum period). Their breast size, thoracic spine posture, and pain were measured using a measuring tape (cm), inclinometer, and Revised Oswestry thoracic spine pain disability questionnaire, respectively. Data were analyzed using descriptive and relevant inferential statistics at $p<0.05$.

Results and Discussion

Most of the participants fall under the category of breast cup size B (61.75%), have no history of thoracic spine pain (87.4%), and about half of them (50.2%) have normal thoracic spine posture (low category with values ranging between 20º and 35º. Table 1 showed that breast size was significantly (r= 0.162, p=0.001) correlated with thoracic spine posture. There was no significant correlation (r=0.066, p=0.622) with thoracic spine pain.

Large breasts can gravitational pull leading to an anterior shift in the line of gravity, increasing the muscular effort needed to maintain balance [2]. This could also produce the downward drag effect with resulting compensatory mechanisms that could lead to postural changes in the biomechanics of the spine [1], resulting in an increasing thoracic spine deformity such as thoracic kyphosis and cervical lordosis [3], with an associated back pain. Considering that pregnancy and lactation are associated with increased breast size, women must be advised on thoracic spine care during these periods. Such care includes back extensor exercises to strengthen the back muscles, wearing firmly fitted brasserie to support the breasts [2], as well as adopting proper back posture while carrying out daily childcare activities.

Variables	**Breast Cup Size n(%)**						
Thoracic Spine Posture	**A** (1")	**B** (2")	**C** (3")	**D** (4")	**E** (5")	**F** (6")	**R (*P*)**
Normal (Low 20°-35°)	2 (50.0)	124 (50.2)	33 (37.9)	16 (34.7)	5 (38.4)	0 (0)	0.162 (0.001) *
Normal (High 36°-50°)	2 (50.0)	119 (48.1)	51 (58.6)	27 (58.6)	7 (58.8)	3 (100)	
Hyperkyphosis (*51°- +*)	0 (0)	4 (1.6)	3 (3.4)	3 (6.5)	1 (7.6)	0 (0)	
Total	4 (1)	247 (61.75)	87 (21.75)	46 (11.5)	13 (3.25)	3 (0.75)	400 (100)

*Key: Percentages were derived from the sum of the breast size; * significance at p<0.05*

Table 1: Relationship between breast Size and each of thoracic spine posture and pain intensity of the participants**.**

Conclusions

Increasing breast size is weakly associated with a tendency towards a kyphotic posture of the thoracic spine. Postural education and care around adequate support of the breast with suitable fitting brassieres may help prevent kyphotic deformities. Further research with a long-term follow-up is recommended to further confirm the causal relationship of these variables.

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