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Body composition, body mass index, waist circumference and perimenopausal symptoms in women living in Ireland

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Menopause, as signified by 12 months of amenorrhea, marks the end of female fertility[1]. The perimenopausal stage preceding this event, is frequently symptomatic, with previous research suggesting that a higher body mass index (BMI) may be associated with more severe menopausal symptoms[2]. Changes to body composition have also previously been linked to the decline in hormones that accompany this midlife transition[3]. This cross-sectional, observational study aimed to shed light on this underexplored area in Ireland.

Approval was granted by the Technological University of the Shannon Research Ethics Committee. A convenience sample of perimenopausal women (>40 years old) were recruited via social media and workplaces. Participants self-reported their symptom severity using the previously validated Menopause Rating Scale (MRS)[4]. Psychological, somatic, and urogenital symptom categories were rated from 0 (no symptoms) to 4 (very severe symptoms), with a potential maximum score of 44. An overall score and a sub-score for each of the 3 symptom categories was generated. Participants self-identified their perimenopausal stage (early or late) based on descriptions of the STRAW+10 criterion[5]. A range of anthropometric measurements were taken including height, weight, waist circumference (WC) and body fat (BF) percentage (using TANITA MC-580 tetrapolar bioelectrical impedance scales). Following descriptive analysis, Spearman's correlation coefficient was utilised to test the relationship between MRS and anthropometric measurements.

Participants (N = 112) had a mean age of 48.05 ± 3.48 years, a mean WC of 95.2 ± 16.9cm, a mean BF percentage of 34.9 ± 7.3. Prevalence of healthy, overweight, and obesity BMI amongst participants was 29%, 36% and 36% respectively, with a mean of 29.0 ± 6.6kg/m^2 amongst the sample. Overall mean MRS symptom score was 15.3 ± 6.9. There was a positive correlation between participant's overall symptom rating and, their BF percentage (r = 0.30, P = 0.001), WC (r = 0.30, P = 0.002), and BMI (r = 0.31, P = 0.001). This relationship was also observed in the symptom sub-score categories. Somatic sub-score positively correlated with BF percentage (r = 0.24, P = 0.010), WC (r = 0.31, P<0.001) and BMI (r = 0.31, P<0.001). Urogenital sub-score was similarly positively correlated to all 3 anthropometric measurements, BF percentage (r = 0.24, P = .010), WC (r = 0.24, P = 0.011), and BMI (r = 0.23, P = 0.014). Psychological sub-score was correlated positively with BF percentage (r = 0.23, P = 0.015) and BMI (r = 0.21, P = 0.026), but not WC.

The findings from this study suggest that a higher BF percentage, WC and BMI may be associated with a more symptomatic perimenopausal stage. Further studies are warranted to further explore this, and how to target interventions.

References

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