JCHS
Journal of Clinical and Health Sciences
#2
2026

SUPPLEMENTARY ISSUE

Malaysian Obesity Society
MYOS

2ND NATIONAL OBESITY SCIENTIFIC CONFERENCE

ABSTRACT BOOK

11th - 12th April 2026
Connexion Conference & Event Centre,
Kuala Lumpur, Malaysia

Theme
Obesity as a Treatable Chronic Disease: Science, Strategy, and Success

Issue **September** 2026 | Volume **11** Issue **02 (Supplementary)**
eISSN 0127-984x
jchs-medicine.uitm.edu.my
Universiti Teknologi MARA

Journal of Clinical and Health Sciences, Vol 11 Issue 2(Supplementary) 2026
The 2nd Malaysian Obesity Society (MYOS) National Obesity Scientific Meeting (NOSC)
Obesity as a Treatable Chronic Disease: Science, Strategy and Success, 11th – 12th April 2026
https://doi.org/10.24191/jchs.v11i2.13578

PD-48

Association Between Diabesity and the Prevalence of Diabetic Peripheral Neuropathy – Sub Analysis from Previous Conducted Study

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Introduction:
Obesity and diabetes have reached epidemic proportions worldwide in recent years. The coexistence of these conditions, termed diabesity, may further elevate the risk of developing diabetic peripheral neuropathy (DPN), a prevalent complication of diabetes. This study aimed to evaluate the association between obesity and the prevalence of DPN, as well as other microvascular complications of diabetes, among patients with T2DM

Methods:
This study represents a sub analysis of a previously conducted cross-sectional study carried out at UiTM Specialist Centre Sungai Buloh and Hospital Al-Sultan Abdullah. It involved patients aged 18 to 60 years with type 2 diabetes mellitus (T2DM) of more than 5 years duration (n = 132). Obesity was assessed using anthropometric measurements and defined as a body mass index (BMI) >27.5 kg/m². The diagnosis of DPN was established based on positive nerve conduction study (NCS) findings and other microvascular complications were confirmed from hospital records.

Results:
The study population had a mean age of 60.16 ± 10.28 years and a mean duration of diabetes of 14.82 ± 6.66 years. The overall prevalence of diabetic peripheral neuropathy (DPN) was 51.5% (n = 68). More than half of the participants were classified as obese (53%, n = 70), and among these individuals, 64% (n = 45) had DPN. Obesity was significantly associated with DPN, with individuals with obesity having approximately threefold higher odds of developing DPN compared to non-obese individuals (OR = 3.052, 95% CI: 1.500–6.210, p = 0.002). Additionally, nephropathy was also significantly associated with obesity (OR = 2.157, 95% CI: 1.044–4.453, p = 0.038).

Conclusion:
More than half of participants with diabesity were found to have DPN. Furthermore, the presence of obesity was significantly associated with nephropathy, highlighting the importance of early screening for diabetic microvascular complications especially in individuals with diabesity.

Keywords: Diabetic peripheral neuropathy, obesity, diabesity, nephropathy, nerve conduction study