

# Diabetic kidney disease and its associated factors among patients in a selected primary care clinic in Pahang

Nor Azam Kamaruzaman<sup>1</sup>, Nur Azyyati AA<sup>2</sup>, Hafizah Pasi<sup>3</sup>

<sup>1</sup>Department of Family Medicine IIUM, <sup>2</sup>Klinik Kesihatan Chini, Pekan, Pahang, <sup>3</sup>Department of Community Medicine IIUM Kuantan

## INTRODUCTION

Diabetic Kidney Disease (DKD) is an important microvascular complication and the principal cause for dialysis in Malaysia. Preventing and retarding its progress is the paramount task of any primary healthcare team, and optimal handling of the risk factors is one of the strategy. Uncontrolled glucose and blood pressure control has been recognized as modifiable risk factors. Nevertheless, local data is important to enhance interventional activity.

## OBJECTIVE

We aim to study the prevalence and associated factors for DKD among type 2 diabetic patients from a primary health clinic in Pekan, Pahang

## METHODOLOGY

A cross-sectional study was conducted among 202 patients attending diabetic clinic in Klinik Kesihatan Chini, Pekan, Pahang within a period of four months. Data was extracted from diabetic record book and was analyzed using SPSS V22.0 .

## RESULTS : Demography



**Total = 202 patients**

Women - 59.4%

Age < 60 year - 59%

Malay - 98%

Overweight - 68.8%

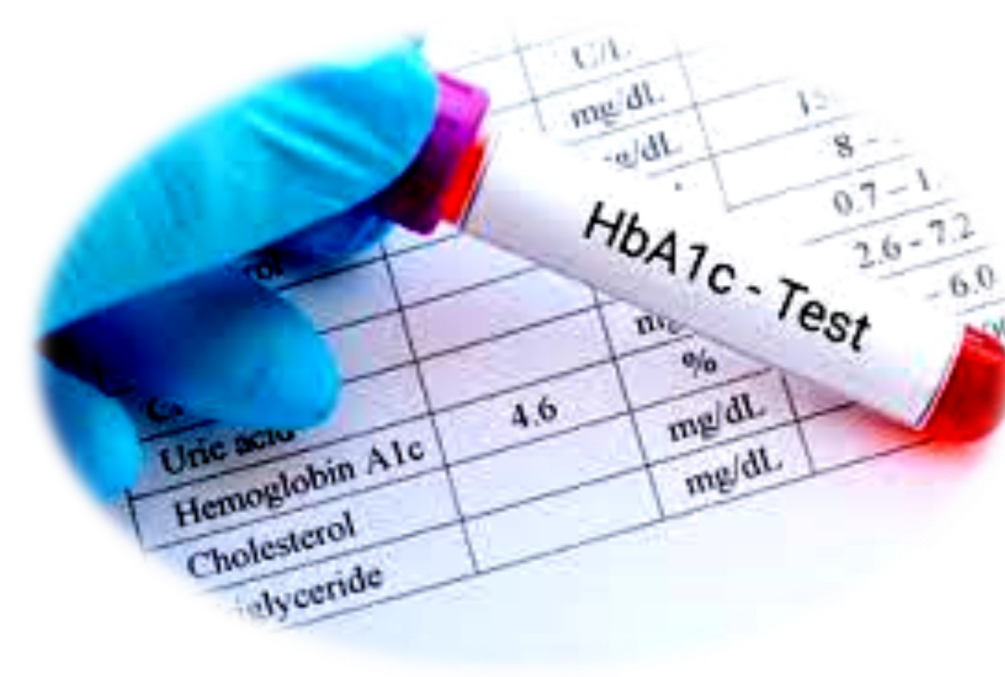
## RESULTS : Clinical findings



### Blood pressure

≤ 140/90mmHg - 46.5%

> 140/90mmHg - 53.5%



### HbA1c

≤ 6.5% - 17.3%

> 6.5% - 82.7%

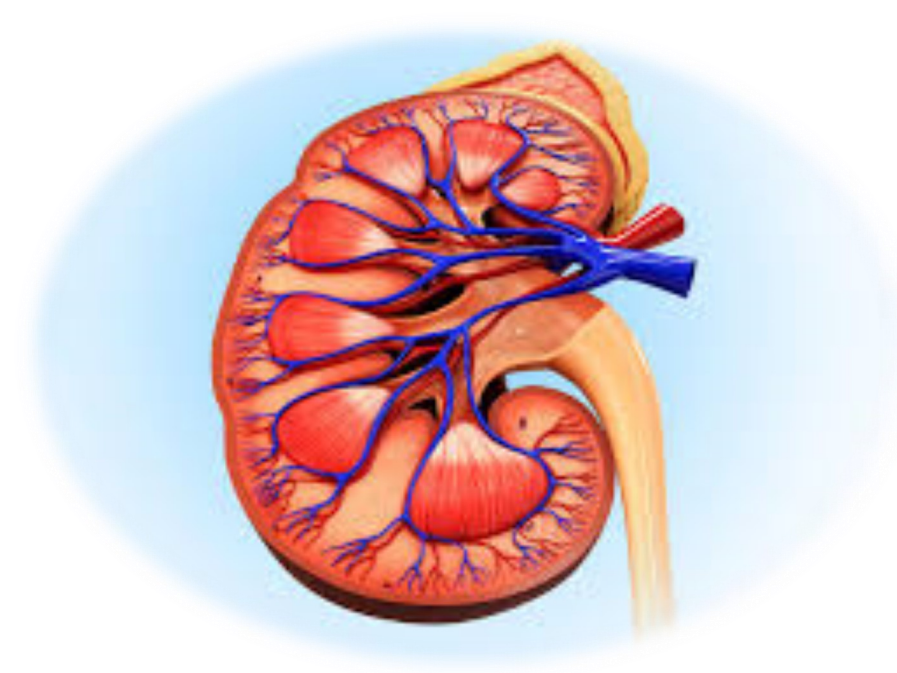


### Urine protein

No proteinuria - 44.1%

Microalbuminuria - 20.8%

Overt proteinuria - 35.1%



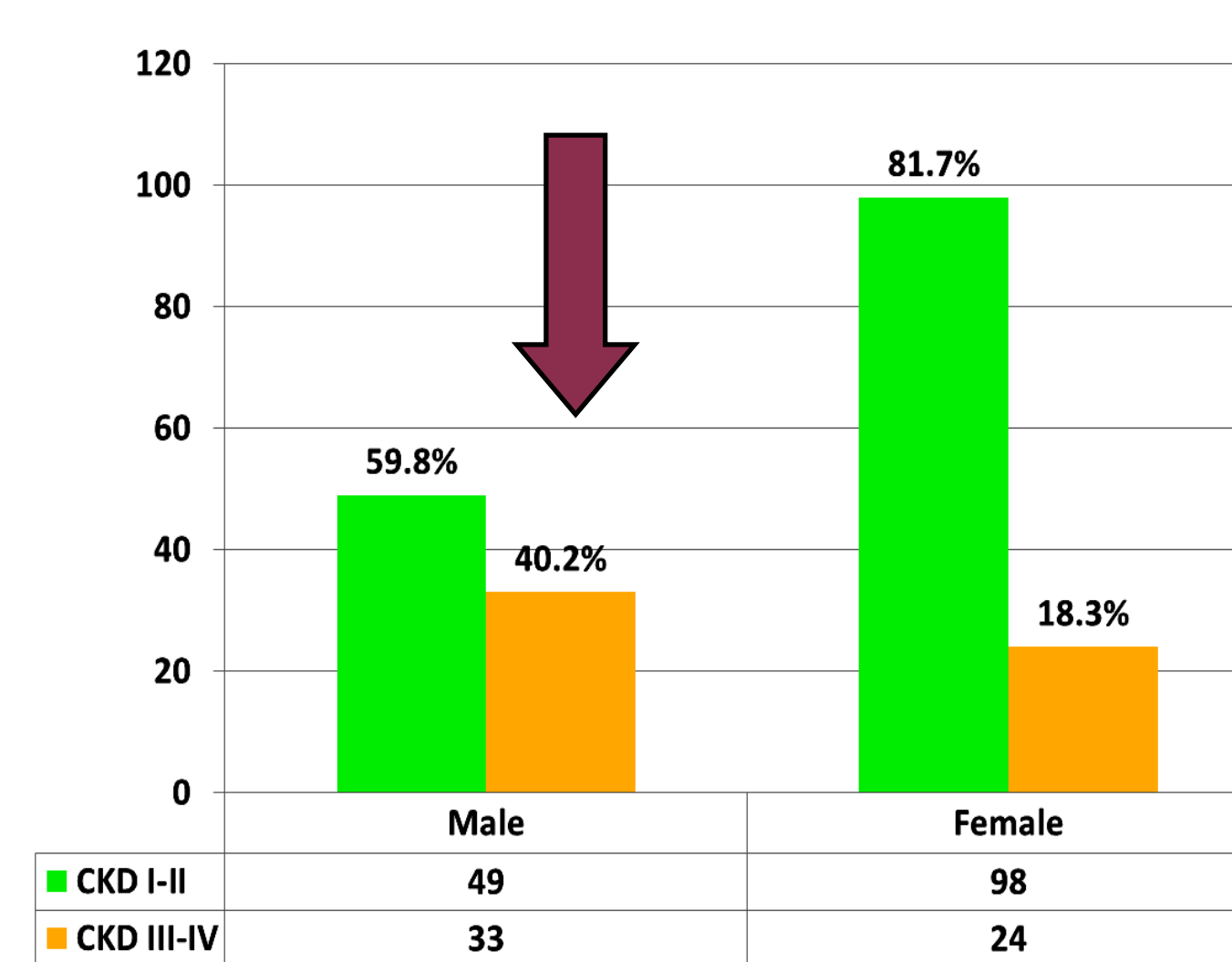
### eGFR

GFR 1 -2 - 72.8%

GFR 3 - 5 - 27.2%

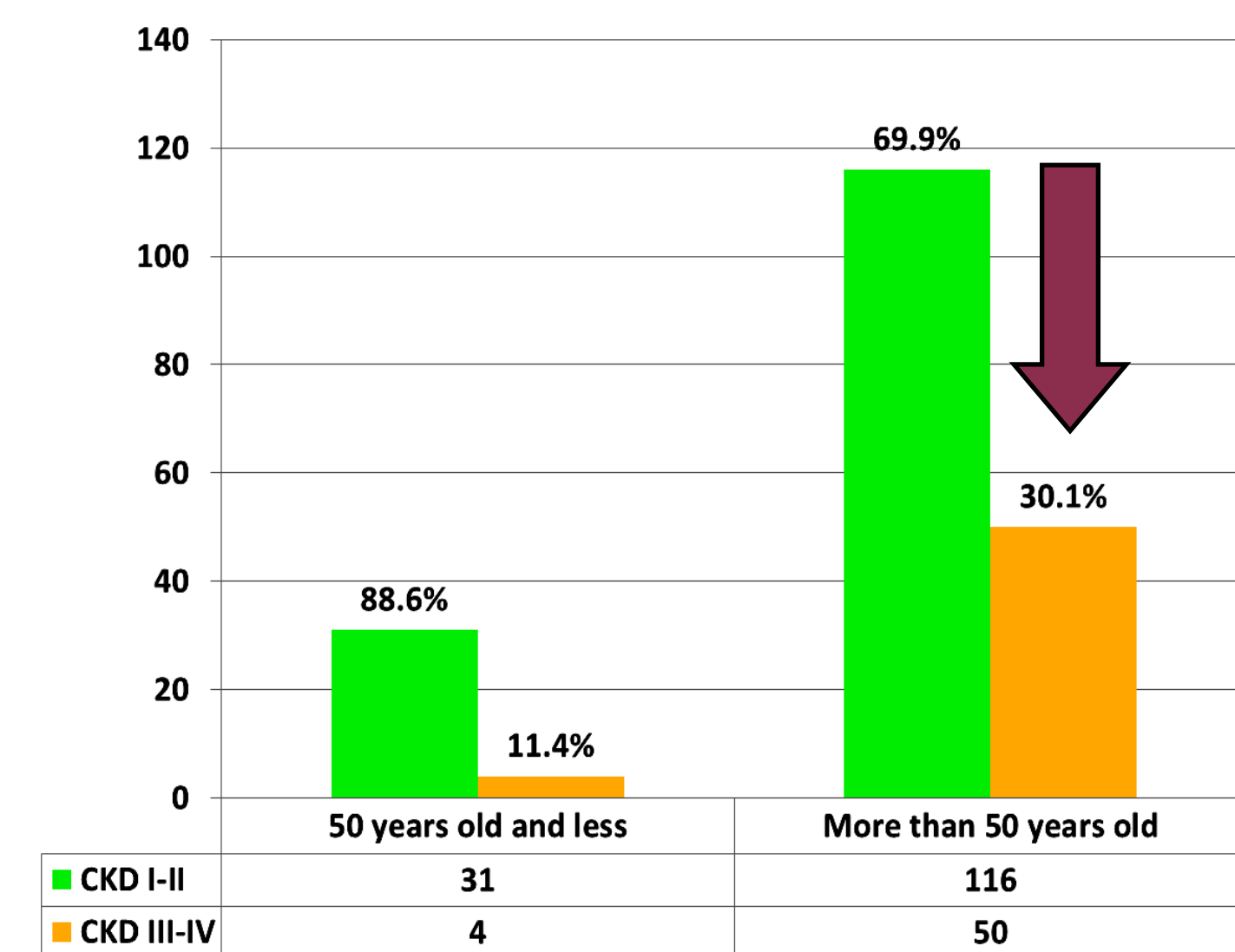
## RESULTS : Significant association between variables

### 1. Gender and GFR stages



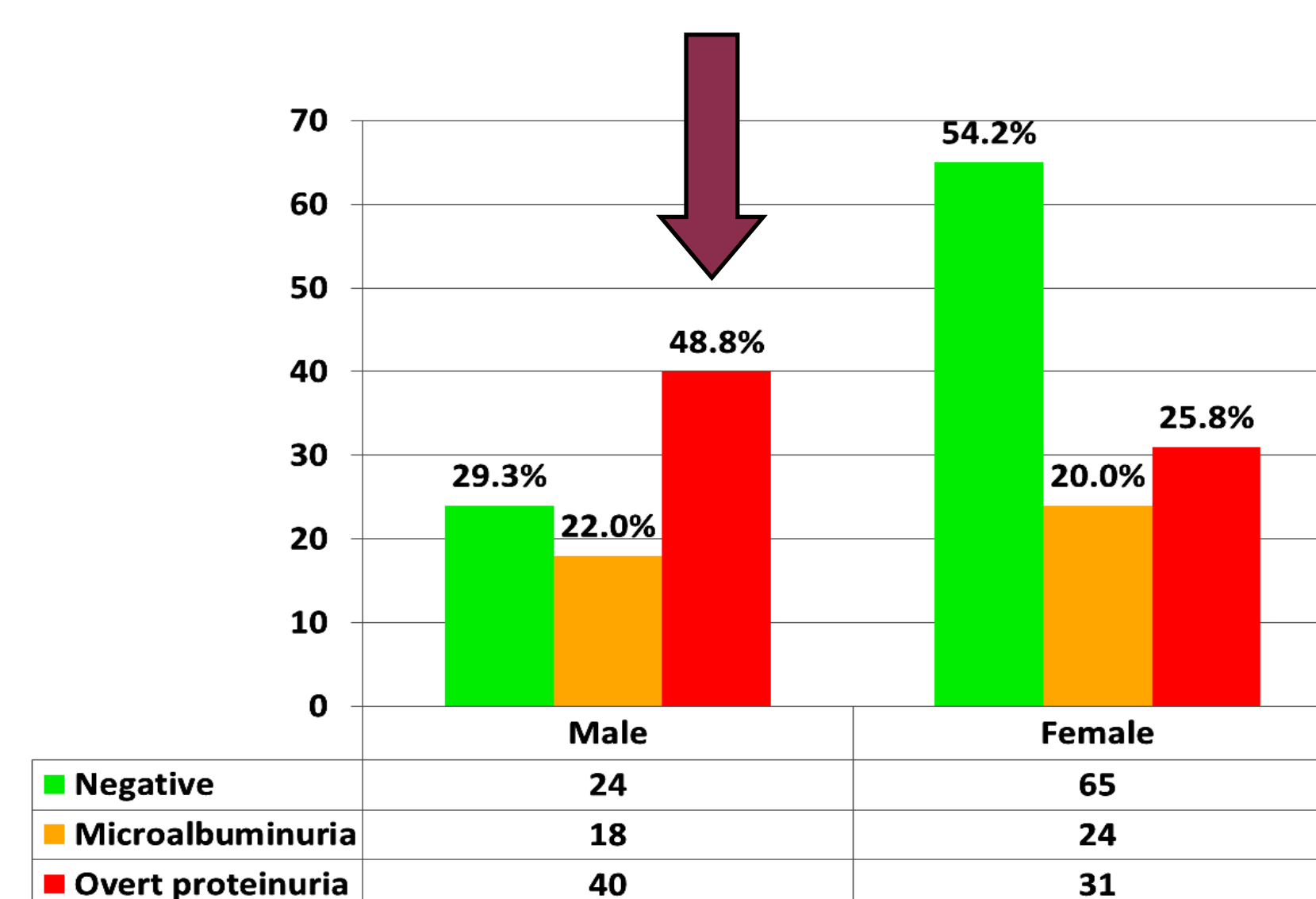
p = 0.001

### 2. Age and GFR stages



p = 0.023

### 3. Gender and urine protein



p = 0.001

## DISCUSSION

- Majority of the diabetic patients are Malay, women, and non-senior citizen with greater part of them have uncontrolled diabetes, uncontrolled blood pressure, and overweight/obesity.
- A quarter of the patients already classified in GFR 3-5 while more than half have proteinuria (microalbuminuria & overt proteinuria).
- Non-modifiable factor which is male gender was found to be significantly associated with the development of diabetic kidney disease in this study population.
- As expected, those aged more than 50 years old (another non-modifiable risk) have significantly higher GFR stages.
- Surprisingly, no significant association was found between control of diabetes, blood pressure or BMI with neither GFR stages nor proteinuria (p > 0.05). Possibly this study population has homogenous control of these conditions.

## CONCLUSION

- Male gender and age above 50 years were found to be associated with higher risk for diabetic kidney disease in this study population. Other confounding factors need to be explored and intervened.
- Further evaluation is required to identify the reason for absence of association between modifiable factors with DKD in this group.

## REFERENCES

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SELECTED PRIMARY CARE CLINIC IN PAHANG

Nor Azam K.<sup>1</sup>, Nur Azyyati AA.<sup>2</sup>, Hafizah P.<sup>3</sup>

<sup>1</sup>Department of Family Medicine IIUM, Kuantan, Pahang, Malaysia.

<sup>2</sup>Klinik Kesihatan Chini, Pekan, Pahang, Malaysia.

<sup>3</sup>Department of Community Medicine IIUM, Kuantan, Pahang, Malaysia.

**Introduction:** Diabetic Kidney Disease (DKD) is an important microvascular complication and the principal cause for dialysis in Malaysia. Preventing and retarding its progress is one of the paramount tasks of any primary healthcare team, and optimal handling of the risk factors is one of the strategies. We aim to study the prevalence and associated factors for DKD among type 2 diabetic patients from a primary health clinic in Pekan, Pahang. **Materials and Methods:** A cross-sectional study was conducted among 202 patients attending diabetic clinic in KK Chini, Pekan within a period of four months. Data was extracted from diabetic record book and was analyzed using SPSS V22.0. **Results:** More than half of the participants were of female gender (59.4%) and from age group below 60 years old (59%). Majority of them have uncontrolled diabetes (82.7%), uncontrolled blood pressure (53.5%) and overweight/obesity (68.8%). Classification of DKD according to GFR stages: 72.8% have GFR I-II and 27.2% have GFR III-V while according to proteinuria: 44.1% have no proteinuria, 20.8% have microalbuminuria and 35.1% have overt proteinuria. On further analysis, male gender was significantly associated with GFR III-V ( $\chi^2=11.80$ , df (1)  $p=0.001$ ) and overt proteinuria ( $\chi^2=14.24$ , df(2)  $p=0.001$ ). As expected, those aged more than 50 years old have significantly higher GFR stages ( $\chi^2=5.13$ , df (1)  $p=0.024$ ). Surprisingly, this study found no significant association between neither GFR stages nor proteinuria with diabetes control, blood pressure control and BMI ( $p>0.05$ ). **Conclusion:** Non-modifiable factors which are male gender and age more than 50 years old were found to be associated with the development of diabetic kidney disease in this study population. Further evaluation is required to identify the reason for the non-association between modifiable factors with DKD.

