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Effects of psychosocial factors on dietary behaviour in kidney transplant recipients

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- The authors declare no conflicts of interests.

Ethics statement

We declare that autonomous consent free from coercion was obtained from the donors or their next of kin, and that organs were not sourced from executed prisoners or prisoners of conscience.

Introduction

The adherence to dietary behaviour among kidney transplant recipients(KTRs) is typically low, and their dietary behaviour differed from the recommended post-transplant diet due to variations in dietary acculturation and dietary habits. The aim of this study was to explore the effects of psychosocial factors on dietary behaviour in KTRs based on the health promotion model (HPM).

Methods

- This was a multi-center, cross-sectional study involving 289 KTRs from four transplant centers during October 2022 to March 2023.
- Standard questionnaires were used to measure the psychosocial variables.
- A structural equation model was employed to examine the associations among depression, perceived benefit, perceived barrier, self-efficacy, attitude, social support, and dietary behaviour.

Results

- Among the 289 KTRs, 58.82% were male. The mean age of the recipients was 44.37 ± 10.37 years (min:18;max:74).
- The participants reported high levels of attitude, and perceived behaviour benefit and moderate levels of dietary behaviour, social support, self-efficacy and perceived behaviour barrier.

The final structural model

- Depression ($\beta = -0.207, P < 0.001$), perceived behaviour benefit ($\beta = 0.220, P < 0.001$), perceived behaviour barrier ($\beta = -0.234, P < 0.001$), attitude ($\beta = 0.135, P = 0.026$) and social support ($\beta = 0.166, P = 0.001$) exhibited direct effects on dietary behaviour in KTRs.
- Depression, attitude and social support also exhibited indirect effects on dietary behaviour through perceived benefit and perceived barrier. The final model showed a suitable fit of the data: $\chi^2 / df = 2.079$, RMSEA=0.061, CFI=0.945, TLI=0.912, SRMR=0.067. Detailed results are presented in Figure 1 .
- The model explained 38.06% of the variance in dietary behaviour of KTRs.

Table 1 Univariate analyses of dietary behaviour (n=289)

Variables	n(%)	Diet behaviour M(P ₂₅ , P ₇₅)	Z/H statistics	P-value
Age(years)				
18~45	150(51.90)	38.00(33.75,41.25)	1.665 ^b	0.435
46~59	118(40.83)	39.00(35.00,42.00)		
≥60	21(7.27)	38.00(36.00,41.00)		
Gender				
Male	170(58.82)	39.00(35.00,42.00)	-0.083 ^a	0.934
Female	119(41.18)	38.00(34.00,42.00)		
BMI(kg/m²)				
<18.5	33(11.42)	37.00(31.50,42.00)	12.752 ^b	0.002
18.5~23.9	177(61.25)	39.00(36.00,43.00)		
≥24	79(27.34)	36.00(33.00,40.00)		
Employment status				
Employed	153(52.94)	38.00(34.00,43.00)	-0.020 ^a	0.984
Unemployed	136(47.06)	39.00(35.00,41.00)		
Education level				
Junior high school and below	56(19.38)	37.00(33.00,41.75)	4.844 ^b	0.184
Senior high school or technical secondary school	84(29.07)	38.00(34.00,41.75)		
Junior college or bachelor	139(48.10)	39.00(35.00,42.00)		
Master and above	10(3.46)	39.00(35.75,43.00)		
Marital status				
No	60(20.76)	37.00(32.50,42.00)	-1.135 ^a	0.256
Yes	229(79.24)	39.00(35.00,42.00)		
Economic burden				
No	49(16.96)	39.00(36.00,45.00)	-2.546 ^a	0.011
Yes	240(83.04)	38.00(34.00,41.00)		
Time after transplantation(months)				
3-6	23(7.96)	41.00(37.00,47.00)	18.351 ^b	<0.001
7-12	20(6.92)	39.00(33.50,42.00)		
13-60	137(47.40)	39.00(35.00,43.00)		
>60	109(37.72)	37.00(33.00,40.00)		
Donor type				
Deceased donor	261(90.31)	39.00(35.00,42.00)	-0.366 ^a	0.714
Living donor	28(9.69)	37.50(34.00,42.75)		

Note: M = Median; a denotes Mann-Whitney U test; b denotes Kruskal-Wallis test; P < 0.05 are considered significant and are highlighted.

Table 2 Correlations among variables in HPM

	Depression	Perceived behaviour benefit	Perceived behaviour barrier	Self-efficacy	Attitude	Social support	Dietary behaviour
Depression	1.000						
Perceived behaviour benefit	-0.158**	1.000					
Perceived behaviour barrier	0.256**	-0.130*	1.000				
Self-efficacy	-0.039	0.311**	0.041	1.000			
Attitude	-0.245**	0.627**	-0.125*	0.309**	1.000		
Social support	-0.207**	0.338**	-0.067	0.311**	0.333**	1.000	
Dietary behaviour	-0.385**	0.420**	-0.351**	0.123*	0.407**	0.345**	1.000

Note:**Significance level at 0.01; *Significance level at 0.05.

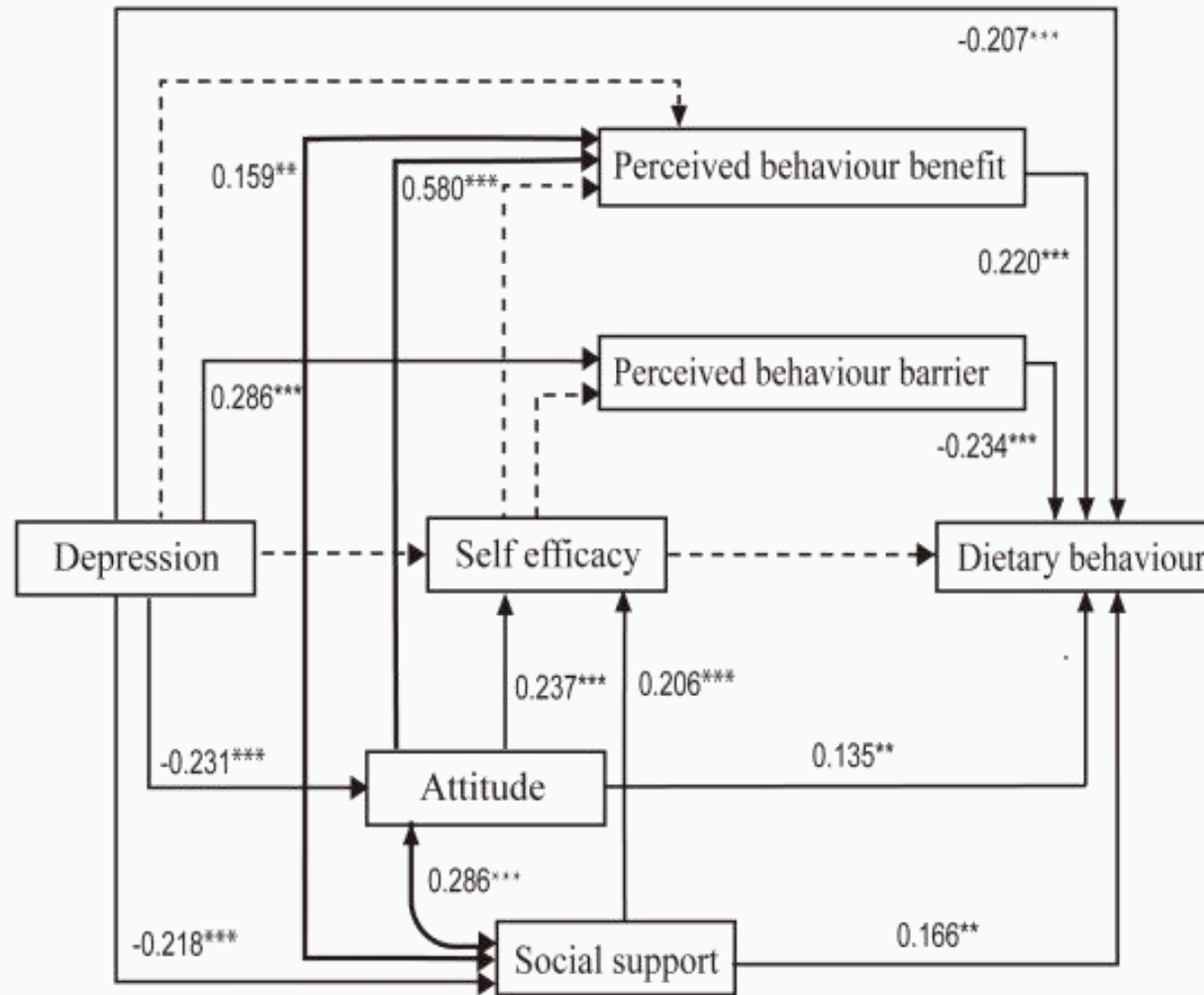


Figure 1. Standardized estimates in the structural equation model

Conclusion

- Dietary behaviour in KTRs can be influenced by complex variables.
- We will consider KTRs' status of depression, attitude, social support, perceived benefit, and perceived barrier when developing interventions to improve their dietary behaviour.

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