Health-Related Social control, Perceived Control, and Diabetic Adjustment in Singaporean Senior Citizens with Type 2 Diabetes

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Summary

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Conclusions

Theoretically, the study provides evidence for the dual effect model of health-related social control. More importantly, the study adds new evidence by examining the role of perceived control in the link underlying health-related social control and diabetic adjustment. Results could partially resolve the inconsistencies in the literature.

Regarding the practical implications, the study suggests that the effect of direct social control on emotional distress and depression depends on patients' self-efficacy and thus family members need to consider patients' self-efficacy level when offering help. Moreover, it highlights the importance of promoting patients' self-efficacy and internal health locus of control in order to improve their diabetic adjustment and ultimate quality of life.

Together, the study represents a valuable attempt to integrate health-related social control received from family members with patients' perceived control belief—self-efficacy and internal health locus of control for understanding the interplay of environmental and personal variables on diabetic adjustment.

Aim of Research

Diabetes Mellitus is one of the most globally prevalent chronic diseases. Singapore has one of the world's fastest aging populations and diabetes has been on the rise. Notably, National Health Survey 2010 statistics show that19.3% of Singaporeans aged 50-59 years and 29.1% of those aged 60-69 years suffer from diabetes, and the rate is projected to double by 2030. If not managed well, diabetes could cause severe complications (e.g., blindness and kidney failure), which in turn impose great burden on individuals, families and the health care system. Although adherence to self-care activities (e.g., diet and exercise) is crucial in glycemic control and complication prevention, studies show that regimen adherence and psychological adjustment are often not optimal in this population. Thus more research is needed in order to improve their regimen adherence and ultimate adjustment in the Singapore context.

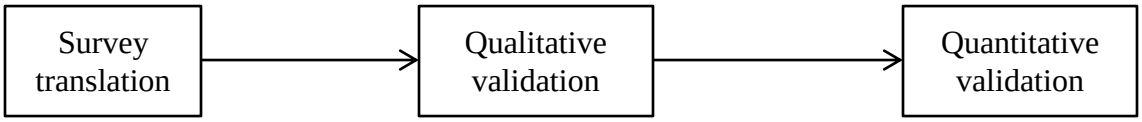
Family is an important resource that could facilitate patients' adherence to medical regimens and improve chronic illness adjustment. World Health Organization states "health care for chronic illness must be oriented around the patient and the family". Studies that do examine the mechanisms between family and diabetic adjustment have mainly been limited to examining the role of social support. Emerging evidence suggests that health-related social control, the regulatory function of family relationships, is another important factor to consider. It operates in two ways: direct and indirect. Direct social control is defined as attempts to regulate, influence, or constrain behaviors in response to actual or perceived violations of norms, with the aim to prevent deviance or health-damaging behaviors, or increase health-enhancing behaviors. Indirect social control refers to the internalization of responsibility or obligation to others, which in turn encourages individuals to maintain healthy behaviors. Overall, social control focuses on how normative health-related behaviors are enforced via involvement in social relationships. Meanwhile, patients' perceived control beliefs, such as self-efficacy and health locus of control are found to influence diabetic adjustment. However, less is known about the joint effects of health-related social control and patients' perceived control beliefs on their diabetic adjustment. Thus this study aimed to address the gap in the literature by examining the interplay of health-related social control received from family members and patients' perceived control (self-efficacy and internal health locus of control) on their diabetic adjustment in a sample of Singaporean senior citizens with type 2 diabetes, in order to have a better understanding of psychosocial correlates of diabetic adjustment.

Method of Research & Progression

Ethical approval

All methods and procedures were approved by the Institutional Review Board of Nanyang Technological University.

Period 1: survey translation & validation



Period 2: survey administration

Participants were eligible for inclusion if they met the following criteria: (a) diagnosed with type 2 diabetes for 1 year or longer; (b) 50 years of age or older; (c) Chinese Singaporeans; (d) no major complications or other severe diseases that would interfere with self-care activities; and (e) no cognitive impairment. Consent form was obtained from eligible participants.

First, we used the forward-backward approach to translate the scales from English to Chinese. After that, we validated the two versions of survey using both qualitative and

quantitative methods. The two versions of questionnaires yielded good reliability. Participants answered a battery of scales in the language of their choice (English or Chinese). During the survey administration, participants spent about 20-30 minutes on the survey and each participant was compensated S$10. A sample of 197 participants was included in this quantitative analysis.

Results of the Research

Descriptive statistics of the sample

	Mean	Standard Deviation
Age	63.21	8.41
Relationship Satisfaction	5.85	1.57
HbA1c	7.32	1.41
Gender		(%)
Male		48.7
Female		51.3
Marital Status		
Married		75.0
Others		25.0
Highest Education Level		
Non-Educated		8.2
Primary		22.1
Secondary		43.1
JC/Polytechnic		14.4
University		9.2
Master		3.1
Medical Insurance		
Yes		68.0
No		32.0
Treatment		
Lifestyle Modification		6.3
Insulin		7.8
Pills		74.0
Insulin & Pills		12.0
Number of Illness		
0		28.7
1		42.6
2		25.6
3		2.6
4		0.5

Results of Moderation Analyses

1. The interaction between direct social control and self-efficacy was significant for emotional distress. Specifically, direct social control was positively related to emotional distress only for those with high self-efficacy, but not for those with low self-efficacy. (Please see Figure 1)
2. The interaction between direct social control and self-efficacy was significant for depression. In particular, direct social control was positively related to depression for those with high self-efficacy, while negatively related to depression for those with low self-efficacy. (Please see Figure 2)
3. Both direct social control and self-efficacy were positively related to self-care activities, but the interaction was not significant.
4. Direct social control increased the odds of higher HbA1c, indicating poorer glycemic control.

Results of Mediation Analyses

The indirect effect of indirect social control on emotional distress via self-efficacy and internal health locus of control was significant (Figure 3). The indirect effect of indirect social control on depression via self-efficacy was significant, while the indirect effect of indirect social control on depression via internal health locus of control was marginally significant (Figure 4). It suggests that self-efficacy and internal health locus of control mediated the relationships between indirect social control and psychological component of diabetic adjustment.

Future Areas to Take Note of, and Going Forward

1. The study highlights the importance for family members to consider patients' perceived control level when they are trying to get involved in patients' diabetic management, although they are well-intended. Community-based intervention programs can be created to teach family members effective communication strategies based on patients' perceived control level, in order to better prompt patients to adhere to regimen and enhance their quality of life.
2. The study provides evidence to target patients' self-efficacy and internal health locus of control in intervention programs.
3. The current study is cross-sectional, and cannot examine the causal relationship. Longitudinal studies are needed to justify the results found in the study.
4. After the justification using longitudinal studies, intervention could be conducted to improve the mutual communication between family members and diabetic patients, and improve patients' diabetic adjustment.

Means of Official Announcement of Research Results

We submitted the results to (1) American Psychological Association 121th Annual Conference, Hawaii, 31st July-4th August, 2013; and (2) Chinese Psychological meeting, Beijing, 26th-28th, August, 2013. They have been accepted by both the two conferences. In addition, we submitted it as a journal article to the Journal of Behavioural Medicine and it is currently under review.

Appendix

Figure 1. Self-efficacy moderated the effect of direct social control on emotional distress.

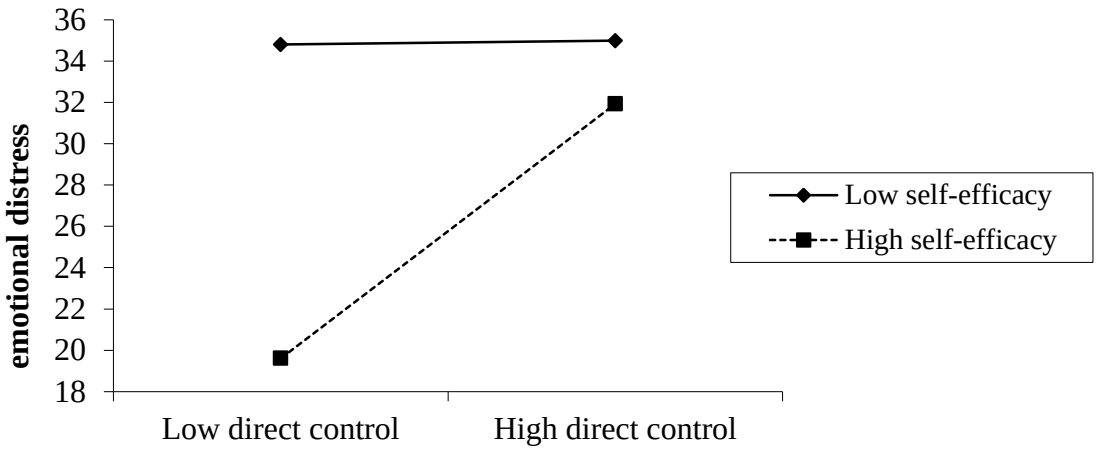


Figure 2. Self-efficacy moderated the effect of direct social control on depression.

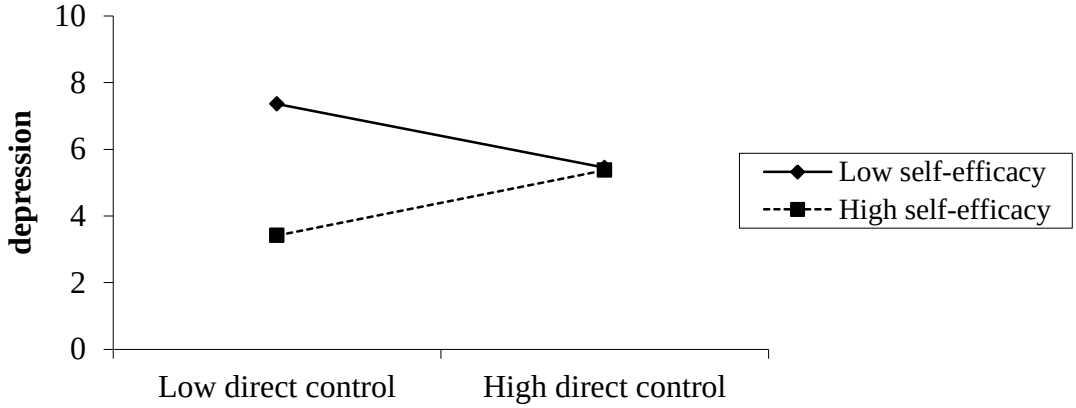


Figure 3. Self-efficacy and internal health locus of control mediated the effect of indirect social control on emotional distress.

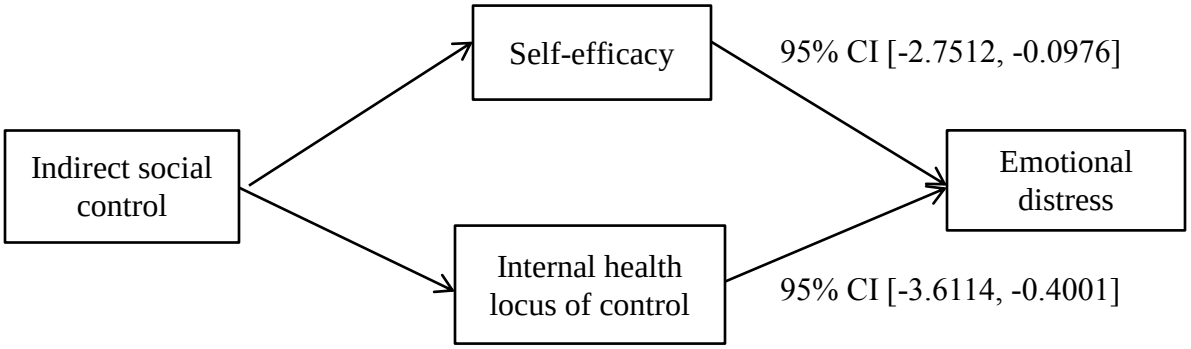


Figure 4. Internal health locus of control mediated the effect of indirect social control on emotional distress.