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**Barriers and enablers to make lifestyle changes among type 2 diabetes patients: A review**

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**Abstract**
Type 2 diabetes is a non-communicable disease that affects most people around the world and is generally the result of excessive food intake and physical inactivity. Therefore, the purpose of this review was to identify facilitators and barriers for lifestyle modifications among type 2 diabetes patients. We combined quantitative and qualitative studies for this systematic narrative review. A literary search was carried out using EBSCO, HighWire Press, Medline, PsycInfo, PubMed and Scopus. Narrative review was used to extract results from quantitative studies, while thematic synthesis was used to extract results from qualitative studies. Twenty-three studies were included in this review, with a total of 2287 participants from Western, Arab and Asian populations. The two main themes generated from this review are intrinsic factors and extrinsic factors that can either be facilitators or barriers to implementing lifestyle change. Among the barriers faced by the participants are established food habits, lack of self-efficacy, lack of motivation, lack of social support, inadequate knowledge, low socio-economic status, food culture and poor time management. In contrast, the facilitating factors generated are strong self-efficacy, high motivation, good habits, and sufficient knowledge. In general, patients with diabetes observed more barriers than facilitators to implementing healthy lifestyle changes. © 2019 Penerbit Universiti Kebangsaan Malaysia. All rights reserved.

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Barriers; Changes; Facilitators; Lifestyle; Type 2 diabetes

**Index Keywords**
diabetes, disease treatment, ethnicity, health status, lifestyle, literature review, qualitative analysis, quantitative analysis; Scopus

**References**
- **Physical activity/exercise and diabetes mellitus**
  ADA

- Akumiah, P.O., Samuel, O.A., Azumah Nayembil, D., Ofosu Agyapong, G., Fataw, P.
**Barriers to adherence to diet and exercise recommendation amongst Type 2 diabetes mellitus patients**

**Physical activity and reported barriers to activity among Type 2 diabetic patients in the United Arab Emirates**

- Ali, O.
**Genetics of Type 2 diabetes**

Youssef, D.  
A systematic review and meta-analysis assessing the effectiveness of pragmatic lifestyle interventions for the prevention of Type 2 diabetes mellitus in routine practice about public health England  

- Booth, A.O., Lowis, C., Dean, M., Hunter, S.J., McKinley, M.C.  
Diet and physical activity in the self-management of Type 2 diabetes: Barriers and facilitators identified by patients and health professionals  

- Brunk, D.R., Taylor, A.G., Clark, M.L., Williams, I.C., Cox, D.J.  
A culturally appropriate self-management program for hispanic adults with Type 2 diabetes and low health literacy skills  

- Bryant, T., Leaver, C., Dunn, J.  
Unmet healthcare need, gender, and health inequalities in Canada  

- Byers, D., Garth, K., Manley, D., Chlebowy, D.O.  
Facilitators and barriers to self-management of Type 2 diabetes among urban African American adults  

- Chary, A., Greiner, M., Bowers, C., Rohloff, P.  
Determining adult Type 2 diabetes-related health care needs in an indigenous population from rural Guatemala: A mixed-methods preliminary study  

- Chatterjee, S., Khunti, K., Davies, M.J.  
Type 2 diabetes  

- Chen, L., Pei, J.H., Kuang, J., Chen, H.M., Chen, Z., Wen Li, Z., Yang, H.Z.  
Effect of lifestyle intervention in patients with Type 2 diabetes: A meta-analysis  

- Chong, S., Ding, D., Byun, R., Comino, E., Bauman, A., Jalaludin, B.  
Lifestyle changes after a diagnosis of Type 2 diabetes  

- Colagiuri, S., Vita, P., Cardona-Morrell, M., Singh, M.F., Farrell, L., Milat, A., Haas, M., Bauman, A.  
The Sydney diabetes prevention program: A community-based translational study  

- Crandall, J., Schade, D., Ma, Y., Fujimoto, W.Y., Barrett-Connor, E., Flower, S., Dagogo-Jack, S., Andres, R.  
The influence of age on the effects of lifestyle modification and metformin in prevention of diabetes  

- 10-year follow-up of diabetes incidence and weight loss in the Diabetes Prevention Program Outcomes Study

https://www.scopus.com/citation/print.uri?origin=recordpage&sid=&src=&stateKey=OFD_1524985956&eid=2-s2.0-85071504945&sort=&clickedLink=… 2/7
Dixon, A.  
**Motivation and confidence: What does it take to change behaviour?**  

Engbers, L.H., Mireille, N.M., Van Poppel, A., Paw, M.C., Van Mechelen, W.  
**The effects of a controlled worksite environmental intervention on determinants of dietary behavior and self-reported fruit, vegetable and fat intake**  

Ezzati, M.  
**Worldwide trends in diabetes since 1980: A pooled analysis of 751 population-based studies with 4.4 million participants**  

Garrard, J.  

Ghimire, S.  
**Barriers to diet and exercise among Nepalese Type 2 diabetic patients**  

Hankonen, N., Absetz, P., Haukkala, A., Uutela, A.  
**Socioeconomic status and psychosocial mechanisms of lifestyle change in a Type 2 diabetes prevention trial**  

**10-year follow-up of intensive glucose control in Type 2 diabetes**  

Ide, N., LoGerfo, J.P., Karmacharya, B.  
**Barriers and facilitators of diabetes services in Nepal: A qualitative evaluation**  

**Prevention of Type 2 diabetes mellitus by changes in lifestyle among subjects with impaired glucose tolerance**  

**Factors associated with non adherence to diet and physical activity among diabetes patients: A cross sectional study**  

Joseph-Williams, N., Elwyn, G., Edwards, A.  
**Knowledge is not power for patients: A systematic review and thematic synthesis of patient-reported barriers and facilitators to shared decision making**  


- Li, G., Zhang, P., Wang, J., Gregg, E.W., Yang, W., Gong, Q., Li, H., Bennett, P.H.
The long-term effect of lifestyle interventions to prevent diabetes in the China Da Qing diabetes prevention study: A 20-year follow-up study

Determinants for the effectiveness of lifestyle intervention in the Finnish Diabetes Prevention Study

Sustained reduction in the incidence of type 2 diabetes by lifestyle intervention: Follow-up of the Finnish diabetes prevention study

Lindström, J., Louheranta, A., Mannelin, M., Rastas, M., Salminen, V., Eriksson, J., Uusitupa, M., Tuomilehto, J.
The finnish Diabetes prevention study (DPS)

Sugar sweetened beverages and risk of metabolic syndrome and Type 2 diabetes: A meta-analysis

Malpass, A., Andrews, R., Turner, K.M.
Patients with Type 2 diabetes experiences of making multiple lifestyle changes: A qualitative study

Mansyur, C.L., Rustveld, L.O., Nash, S.G., Jibaja-Weiss, M.L.
Social factors and barriers to self-care adherence in hispanic men and women with diabetes

Marcy, T.R., Britton, M.L., Harrison, D.
Identification of barriers to appropriate dietary behavior in low-income patients with Type 2 diabetes mellitus

Mathew, R., Gucciardi, E., Melo, M.D., Barata, P.
Self-management experiences among men and women with Type 2 diabetes mellitus: A qualitative analysis

Medagama, A., Galgomuwa, M.
Lack of infrastructure, social and cultural factors limit physical activity among patients with Type 2 diabetes in Rural Sri Lanka, a qualitative study

Messina, J., Campbell, S., Morris, R., Eyles, E., Sanders, C.
A narrative systematic review of factors affecting diabetes prevention in primary care settings

Moher, D., Liberati, A., Tetzlaff, J., Altman, D.G.
**Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement** (2009) *Journal of Clinical Epidemiology*, 62 (10), pp. 1006-1012.


Peimani, M., Monjazebi, F., Ghodssi-Ghassemabadi, R., Nasli-Esfahani, E.

Ratner, R.E.

Riekert, K.A., Ockene, J.K., Pbert, L.

Rise, M.B., Pellerud, A., Rygg, L., Steinsbekk, A.

Roglic, G., Unwin, N., Bennett, P.H., Mathers, C., Tuomilehto, J., Nag, S., Connolly, V., King, H.

Sapkota, S., Brien, J.A.E., Gwynn, J., Flood, V., Aslani, P.

Savoca, M., Miller, C.

Seuring, T., Archangelidi, O., Suhrcke, M.

Shanti, K., Aro, A.R.
**Barriers and facilitators to physical activity among urban residents with diabetes in**
Nepal  

- Sohal, T., Sohal, P., King-Shier, K.M., Khan, N.A.  
  **Barriers and facilitators for Type 2 diabetes management in South Asians: A systematic review**  

- Sun, Q., Spiegelman, D., Van Dam, R.M., Holmes, M.D., Malik, V.S., Willett, W.C., Hu, F.B.  
  **White rice, brown rice, and risk of Type 2 diabetes in US men and women**  

- Umeh, A.E., Nkombua, L.  
  **A study of the knowledge and practice of lifestyle modification in patients with Type 2 diabetes mellitus in middelburg sub-district of Mpumalanga**  

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