Connecting the Dots through Interprofessional Collaboration

Nazli Parast, RN, BScN, MN, EdD (C), CDE, Sharlin Azad, MBBS, and Tina Leech, RD, CDE

Community Diabetes Education Program of Ottawa, Centretown Community Health Centre

June 2020

Abstract

Community creates a sense of belonging and programs that promote community development allow for strengthening the community as a whole. Diabetes is a complex chronic condition with increasing incidences every year in communities. When caring for populations with diabetes several factors need to be considered such as the clients' environmental impact, cultural differences, financial issues, and health literacy level. Adult education and glycemia management require ability to provide knowledge translation in order to ensure the clients' optimal level of understanding and enhance clients' ability to self-manage this chronic condition. Group education provides valuable outcome while individual sessions provide unique self-conceptualization. Considering that around 80% of people living with diabetes, have their diabetes managed in a primary care setting, collaboration between health care providers can make a significant impact in helping clients to improve their glycemic control. There have been studies done to show that the collaboration between diabetes nurse educator, diabetes dietitian educator and primary care provider or endocrinologist in a community setting can improve diabetes management. Community Diabetes Education Program of Ottawa (CDEPO) has been aiming to improve quality of care in community practice in order to allow for better utilization of resources through the development of a Glycemia Management Guide. Managing glycemia requires great effort from both clients and health care providers. Coordinated care, understanding the most significant concern of the client and acting on it are important. Education alone might not achieve clients' glycemic target but motivation in the clients' community setting will help to engage the client in active care and promote behavior change.

Keywords: Diabetes, Chronic Condition, Collaboration, Education, Health

Connecting the Dots through Inter-professional Collaboration

A community is a broad concept that can be viewed in many ways. Members who pursue interests in the same domain while sharing information and engaging in joint discussions can be defined as a community (Wenger, 2008). The Community Diabetes Education Program of Ottawa (CDEPO) has been funded by Ministry of Health and Long-Term Care. The program's mission is a commitment to excellence in providing accessible and timely diabetes education as well as supporting adults in diabetes self-management. CDEPO provides educational sessions regarding diabetes prevention and management to adults across Ottawa in various languages (English, French, Arabic, Chinese, etc). These sessions offer group education as well as individual diabetes education support where the CDEPO diabetes educators provide client care alongside primary care providers.

Diabetes is a chronic condition that affects the body's insulin production and sensitivity to its own insulin (Goldenberg & Punthakee, 2013; Punthakee, Goldenberg, Katz, & Diabetes Canada Clinical Practice Guidelines Expert Committee, 2018). A chronic condition is a lifelong disease that can impact everyday living and will progress over the years. When assessing a chronic condition, it is important to assess the client as a whole because conditions such as diabetes could lead to other conditions such as coronary artery disease, heart failure, diabetic nephropathy, diabetic retinopathy, and diabetic nephropathy. Research shows that 75-90% of individuals, who develop type 2 diabetes, have a family history of diabetes (Punthakee et al., 2018). Improving this chronic condition in the community setting is an important priority. Managing clients' glycemia requires a great amount of effort from both providers' and clients' sides. The important concepts of diabetes education in the community will be covered in this chapter are collaboration and client-

centered care through motivational interviewing, health coaching, the language in diabetes education, and the importance of group education and support to achieve glycemic control.

Individuals living with type 2 diabetes may manage their diabetes with oral medications or insulin injection alone or a combination of oral medications and insulin injection. Majority of individuals living with diabetes require monitoring their blood glucose regularly. Individuals who are at higher risk of developing hypoglycemia such as individuals on multiple daily insulin injections, are required to monitor their blood glucose multiple times per day. Clients' empowerment and ability to perform daily activities while managing diabetes goes beyond dietary changes. In addition to dietary adjustments, clients require basic knowledge of how to use the glucometer and understand the results, take their medications, inject their insulin, how to adjust their insulin to prevent hypoglycemia or hyperglycemia. Continuous information sessions to remain current with updates in diabetes management will help the clients manage their chronic conditions in community settings.

People with diabetes are more likely to access healthcare services due to their complexity of the illness and its multidimensional management (National Diabetes Fact Sheet, 2007). Hospitalization and readmission due to uncontrolled diabetes have been a concern (Kim, Ross, Melkus, Zhao, & Boockvar, 2010). The readmission rate has been higher among minority ethnics group (Kim et al., 2010).

Collaboration

The word collaboration goes beyond the communication between health care providers. As discussed earlier, diabetes may not be an isolated condition. The clients' view, their family members' involvement and the client's community of living make an impact in how well clients' diabetes will be managed. Collaboration between the client, the diabetes educator and primary care

provider (PCP) is an integral part of diabetes management. Around 80% of people living with diabetes are managed in a primary care setting (Clement, Harvey, Rabi, Roscoe, & Sherifali, 2013). Observing two separate studies performed in the community settings may improve one's understanding of the extensive efforts required to help clients manage their diabetes. The first research study was performed through a retrospective analysis of clients seen by CDEPO diabetes educators at Carlington Community Health Centre (Carlington CHC) primary care setting. The outcomes were measured using blood glucose and HbA1C values. Antihyperglycemic agent adjustment recommendations were made by diabetes educators to PCPs when glycemic targets were not met. The majority of the population seen by the diabetes educators at Carlington CHC had some degree of mental health issues such as schizophrenia, bipolar disorder, major depressive disorder, etc.; while, some of these clients had multiple mental health issues. The study showed that more than 1/3 of the clients demonstrated an improvement in glycemia. However, one of the most important conclusions in the study was the importance of the development of trust in order to help promote the client's participation in their care. It may take a longer time for some clients to achieve glycemic control as this research signifies the importance of building trust and understanding trust in individuals living with mental health issues. Seeing clients in the primary care setting allows for better collaboration between the primary health care providers (diabetes educators and PCP) which is the foundation for building trust with clients. Clients' fear of glucometer, lancets, insulin, needles or educational materials create challenges that need to be addressed separately and gradually which require time and effort.

The second research study was a retrospective analysis of clients who were referred by PCP and seen by diabetes educators during a period of 2 years between January 2016 – January 2018 at Southeast Ottawa Community Health Centre (SEOCHC). The HbA1C results after clients

saw the diabetes educators were compared to the HbA1C prior to being seen by diabetes educators. HbA1C improved for 94% of the clients. The mean HbA1C improved from 8.5% to 6.4% (Fig1.). These results demonstrate the importance of collaboration between primary care providers and diabetes educators in a primary care setting, particularly in helping newcomers to Canada who have language and cultural barriers to manage glycemia and improve glycemic outcomes. Newcomers have to adjust to their new area of living, culture, language and adjust to a new lifestyle while managing their illnesses. Clients' uncontrolled hyperglycemia, language barrier, and cultural differences can create challenges in the management of diabetes. Therefore, chronic disease management becomes challenging and at times understanding the need for management of chronic disease is a complex context that needs to be approached diligently by providers. Providers' understanding of the challenges clients are facing and the importance of creating a rapport with the clients and involving their support team in the care team make the care even more complex. It is difficult for one provider to be able to help clients in all aspect of diabetes care. Working as a team with PCPs, chiropodists, social workers, and diabetes educators allow for better understanding of the client as a person rather than an entity with an illness. Diabetes educators help to improve clients' glycemia through influencing a change in behavior as well as making recommendations to clients' health care providers regarding required adjustments to clients' antihyperglycemic agents. Some of the clients at the SEOCHC do not have basic healthcare coverage and the majority do not have any private coverage. The collaboration between diabetes educators and PCP has been supporting these clients by providing support and coverage for their medical supplies and medications. Majority of the clients have made a great effort in making changes to their lifestyle. However, habits are difficult to change and often takes time. It is

important for educators to help clients adapt to healthier lifestyle changes, which is often based on understanding cultural norms.

A multi-site, single-blinded randomized controlled trial compared the effect of a community-based intervention on the quality of life, depressive symptoms, anxiety, self-efficacy, self-management and healthcare costs by implementing a personalized self-management program for older adults with type 2 diabetes mellitus for six months. The program included scheduled appointments with registered nurses or registered dietitians, monthly group wellness programs, monthly provider team case conferences, and care coordination. The community-based program reduced depressive symptoms and comorbidity, improved quality of life, mental health and self-management with no additional costs in health care (Markle-Reid M, Ploeg J, et al 2018).

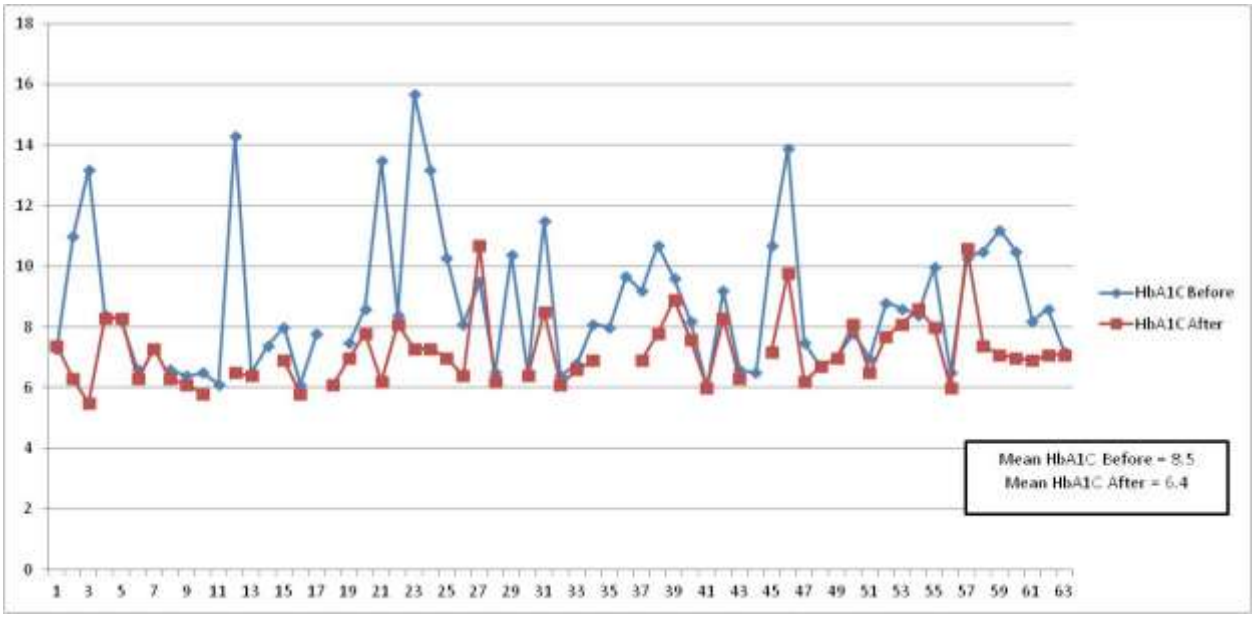

Figure 1: Glycemia Management - Comparing pre and post HbA1C

Client-centered Care

Client-centered care is defined as the practice of caring for clients and their families in a meaningful way that is individualized and includes clients as active participants in their own care (Reynolds, 2009). Every client has unique values, preferences, and desired health outcomes based

on their individualized background, experiences, and lifestyle. Clients' understanding of health information is an important aspect of managing their chronic condition. Clients' level of education, whether it is advanced or not, does not imply health literacy or comprehension of health issues. Health literacy refers to the ability of the client to read, comprehend, and act on the health information and it is linked with the ability to make appropriate health decisions (Nielsen-Bohlman, Panzer, & Kindig, 2004). As mentioned by LaDonna et al. (2017) understanding clients' needs will help clients feel that they are a vital part of the care team. Health care is changing rapidly and medical knowledge is advancing and evolving which makes it difficult for clients to be able to stay informed as well as maintain and retain the health-related information. Client-centered care involves changing the relationship between healthcare providers and clients from the traditional model, in which most clients with similar conditions receive the same treatment by a healthcare provider in a passive and unidirectional manner, into a client-provider partnership that considers treatment options based on a client's unique concerns, preferences, and values (Coulter & Ellins, 2007). A therapeutic decision-making approach by involving clients allows healthcare providers to better understand the clients, advocate for the clients' needs and engage in a collaborative client-centered process (Brooten et al., 2003). Clients' adaptation to chronic illness is linked to their engagement in treatment and/or management of the illness (Hibbard & Greene, 2013). Change does not happen rapidly and in order for a change to happen, education is required (Gardner, 2015). Providing education is useful but not everyone is the same and not everyone learns information in the same way. If the goal truly is to improve the management of diabetes through education, then the care has to be client focused. Client-centered care would consider all factors impacting a person's health and the person's viewpoint in order to optimize the management of the person's chronic conditions (Tinetti, Naik, & Dodson, 2016).

Variety of methods can be used to improve Client -centered care. Motivational interviewing, health coaching, improving the use of language in diabetes and support groups can improve client-centered care.

Motivational Interviewing

A client's health education requires the client's understanding of health information. It is important for health care providers to take into consideration clients' health literacy level when involving them in their own care. "Motivational Interviewing (MI) is a client-centered counseling method for addressing the common problem of ambivalence about change." (Miller, W. R., & Rollnick, S.2012). Implementing motivational interviewing allows expression of understanding of clients' views, needs and values and focuses on empowering the person. Motivational interviewing is an effective method to understand clients better and help them achieve improvements in their behaviors (Van Nes & Sawatzky, 2010). Motivational interviewing helps to avoid direct confrontation which can often cause resistance to the management of the condition by clients (Van Nes & Sawatzky, 2010). Motivation can be viewed differently by every client. It is important to create a safe environment for clients to be able to share their views and goals, which is especially important when the client's culture and values are different than those of the provider. Research shows that motivational interviewing improves self-management, psychological and glycemic outcomes in clients living with diabetes. Considering a chronic condition such as diabetes, providing motivation for self-management can be an essential method for improving the client's health.

Health Coaching

Self-monitoring and administration are important parts of self-care in people living with diabetes because they may have to routinely monitor their blood glucose, weight, carbohydrate

intake, and adjust the dosage of their insulin to help them prevent hyperglycemia or hypoglycemia. Teaching alone might not be a sufficient method to help clients understand and remember health information. However, coaching helps to empower clients, and guides providers to see the person as a whole and not just a person learning information (Hayes & Kalmakis, 2007). Understanding clients' health literacy level and coaching them can help the clients understand the information more clearly. Coaching can be more difficult than educating clients because it requires an extensive amount of time and effort (Jeon & Benavente, 2016). As mentioned by Hayes and Kalmakis (2007), mentoring and coaching are different because coaching allows providers to better understand the clients, their goals, feelings, and needs. Health coaching can include clients' and family members' involvements because it allows them to be part of the care team. Family members can act as resources and provide support to clients and involving them has shown to improve client's heart failure management (Löfvenmark et al, 2011).

Language in Diabetes Education

Language is an essential tool for health education and requires careful consideration when health care professionals are building therapeutic relationships with clients. It affects a client's identity and change in attitude, social perception, stereotyping, and intergroup bias (Dickinson et al 2017). The use of language can either empower a person or hinder a person's perception of themselves, their condition and their progress. The Philosophy of Language published by the International Diabetes Federation highlights the impact "diabetes" dialect can have on a person living with diabetes. Words such as "diabetic", "sufferer", "non-compliant", "non-adherent" and "control" can make a person feel powerless, diminish their self-esteem, feel judgemental and generate a great deal of stress (Dunning et al., 2014). The American Medical Association recommends to avoid labeling people with their diseases or disabilities (i.e. diabetics), avoid words

that imply negative emotions (i.e. suffers, afflicted with) and to avoid euphemistic descriptions such as challenged or special (Iverson, 2007). Five evidence-informed recommendations for client-centered communication detailed in Table 1 highlights the importance of these recommendations with examples (Dickinson et al 2017).

Table 1. Recommendations of Language used in Diabetes Education and its rationale

	Recommendations	**Rationale**	**Potentially Negative Connotations**	**Suggested Language**
1.	Non-judgemental language based on facts, actions and physiology/biology	Adults with diabetes reported that the language used by health care providers, care-givers and the public create a sense of judgement (Dickson, 2017) resulting in under-reporting of symptoms or blood glucose reports (Kendrick et al., 2005) (Broom et al., 2004).	Controlled/ uncontrolled Well controlled/ poorly controlled	Glycemic target, Glycemic Stability, Glycemic variability
2.	Language free of Stigma	Stigma is labeling and identifying human differences via stereotyping where the person is associated to the unwanted condition (Link, Phelan, 2006)	Diabetic	Person with diabetes, Person living with Diabetes

3.	Strength based, respectful, inclusive and hopeful language	Language that is focused on identifying a person's strengths and needs, acknowledging and encouraging his/her progress, and building the confidence that one can overcome any fear regarding Diabetes and its complications. (Dickinson et al 2017)	Complaint / non-complaint Adherent /Non-adherent	He takes medication regularly. She takes insulin when she can afford it.
4.	Promotes collaborations between clients and providers	Health providers should avoid authoritative language (Dellasega, Añel-Tiangco, & Gabbay, 2012) and should build trust and actively engage the person in the discussion. They should encourage self-directed goals and inform that reaching goals can be difficult (Dickinson et al., 2017).	Allowed/ not allowed Cheating, Failed	May we make a plan? Would you like to consider? Metformin was not adequate to reach his/her goals.
5.	Client centered	First person language is "an essential starting point for conveying respect." (Jensen ME et al 2013) It focuses on the	Suffers from/ Victim of	Lives with diabetes / has diabetes

		person, removes negative sublimations and promotes active involvement in Diabetes self-management (Dunning T, Speight J, & Bennett C 2017) .	How long have you been diabetic?	How long have you had diabetes?

Educational Groups

Group education without drug therapy has shown to improve glycemia management of clients (Reale et al., 2018). Development within the community will support the establishment of a stronger community that controls and uses assets to promote a healthier society and improves the quality of life of the members in the community. Additionally, group educations in the community setting allow individuals to manage their diabetes in the community through the support they receive from educators and peers. Empowering community through its development could lead to long-lasting impacts that can be nurtured within the community for generations (Ledwith, 2011). Social support positively impacts client's understanding and management of his or her chronic illness (Coulter & Ellins, 2007). CDEPO has developed an Understanding Diabetes group session and 6 other workshops; Healthy Eating - Getting Started, Healthy Eating - Carb Counting & Label Reading, Being Active, Improving Blood Glucose with Meters & Meds, Stress and Diabetes, and Reducing Risks of Complications. The group session and workshops are designed to help individuals learn about diabetes and educate them to manage their diabetes. Studies have shown that diabetes groups with regular interactive classes from the health care team, helped clients motivate each other, improved self-care, improved glycated hemoglobin levels and their overall

health (Tu et al., 2016). The clients' acceptance and coping skills also improved while a sense of social connection developed (Johnston, Irving, Mill, Rowan, & Liddy, 2012).

CDEPO has also developed support groups in addition to educational groups to help clients learn about others experiences and know that they are not alone because diabetes impacts many individuals. The educators' availability in the groups allows for the accuracy of information being shared and prevents misunderstandings or misinterpretations of their condition. Furthermore, there are individual sessions which allows clients to discuss their health on a one-on-one basis and address any concerns that they may have not been comfortable sharing in group sessions, as well as unique and individualized glycemia management. These sessions are available in a variety of languages allowing clients to communicate in a language they are more comfortable with.

In summary, chronic illnesses impact many people worldwide and the number of people living with chronic illnesses is increasing (Cumbie et al., 2004). Management of chronic illnesses can be challenging but collaborative client-centered care and approach involving interdisciplinary health care teams including the person and their families can be a positive way to help clients actively participate in the management of their illness. Client-centered care is an important approach in helping individuals living with a chronic illness, as every person's needs are unique which is dependent on the person's chronic illness (Cumbie et al., 2004). Client-centered care requires implementation of strategies to improve clients' health literacy in order to ensure that the clients' needs are being met and their views are being valued and respected. The strategies could be providing collaborative care, educational follow-up, motivational interviewing, health coaching, improving the use of language and investing in educational groups. Educating and helping clients to understand their health and illness and how they can improve or maintain it, can help them to take control of their illness.

References

Baker, D. W., DeWalt, D. A., Schillinger, D., Hawk, V., Ruo, B., Bibbins-Domingo, K., ... Pignone, M. (2011). Teach to goal: Theory and design principles of an intervention to improve heart failure self-management skills of patients with low health literacy. *Journal of Health Communication*, *16*(sup3), 73-88. doi: 10.1080/10810730.2011.604379

Boyde, M., Song, S., Peters, R., Turner, C., Thompson, D. R., & Stewart, S. (2013). Pilot testing of a self-care education intervention for patients with heart failure. *European Journal of Cardiovascular Nursing*, *12*(1), 39-46. doi: 10.1177/1474515111430881

Broom, D., & Whittaker, A. (2004). Controlling diabetes, controlling diabetics: moral language in the management of diabetes type 2. *Social Science & Medicine*, *58*(11), 2371-2382. doi: 10.1016/j.socscimed.2003.09.002

Brooten, D., Youngblut, J. M., Deatrick, J., Naylor, M., & York, R. (2003). Patient problems, advanced practice nurse (APN) interventions, time and contacts among five patient groups. *Journal of Nursing Scholarship*, *35*(1), 73-79. doi:10.1111/j.1547-5069.2003.00073.x.

Chen, A. M., Yehle, K. S., Plake, K. S., Murawski, M. M., & Mason, H. L. (2011). Health literacy and self-care of patients with heart failure. *The Journal of Cardiovascular Nursing*, *26*(6), 446. doi: 10.1097/JCN.0b013e31820598d4

Chodosh, J., Morton, S. C., Mojica, W., Maglione, M., Suttorp, M. J., Hilton, L., ... & Shekelle, P. (2005). Meta-analysis: Chronic disease self-management programs for older adults. *Annals of Internal Medicine*, *143*(6), 427-438. doi: 10.7326/0003-4819-143-6-200509200-00007

Clark, A. P., McDougall, G., Riegel, B., Joiner-Rogers, G., Innerarity, S., Meraviglia, M., ... & Davila, A. (2015). Health status and self-care outcomes following an education-support intervention for people with chronic heart failure. *The Journal of Cardiovascular Nursing*, *30*(4 0 1), S3. doi: [10.1097/JCN.0000000000000169]

Clement, M., Harvey, B., Rabi, D. M., Roscoe, R. S., & Sherifali, D. (2013). Organization of diabetes care. Canadian journal of diabetes, 37, S20-S25.

Coulter, A., & Ellins, J. (2007). Effectiveness of strategies for informing, educating, and involving patients. *BMJ*, *335*(7609), 24-27. doi: 10.1136/bmj.39246.581169.80

Cumbie, S. A., Conley, V. M., & Burman, M. E. (2004). Advanced practice nursing model for comprehensive care with chronic illness: model for promoting process engagement. *Advances in Nursing Science*, *27*(1), 70-80. Retreived from http://0-search.ebscohost.com.aupac.lib.athabascau.ca/login.aspx?direct=true&db=rzh&AN=106736617&site=eds-live.

Dickinson, J.K., Guzman, S.J., Maryniuk, M. D., O'Brian, C.A., Kadohiro, J.K., Jackson, R.A., D'Hondt, N., Montgomery, B., Close, K.L., & Funnell, M.M. (2017). The use of language in diabetes care and education. The Diabetes Educator 2017 Dec;43(6):551-564. doi: 10.1177/0145721717735535

Dickinson, J. K. (2018). The experience of diabetes-related language in diabetes care. *Diabetes Spectrum*, *31*(1), 58-64. doi: 10.2337/ds16-0082.

Dellasega, C., Añel-Tiangco, R. M., & Gabbay, R. A. (2012). How patients with type 2 diabetes mellitus respond to motivational interviewing. *Diabetes research and clinical practice*, *95*(1), 37-41. doi: 10.1016/j.diabres.2011.08.011

Dunning, T., Speight, J., & Bennett, C. (2017). Language, the "diabetes restricted code/dialect," and what it means for people with diabetes and clinicians. *The Diabetes Educator, 43*(1), 18-26. doi: 10.1177/0145721716683449

Dunning, T., Silverstein, A., Bunyan, G., Delicata, C., Grummitt, J., & Belton, A. (2014). *International diabetes federation: Language philosophy.* Retrieved from https://jaime-dulceguerrero.com/wp-content/uploads/2015/03/IDF-LANGPHI-2.pdf

Fenner, D. J., Gulati, S. K., & Emig, M. E. (2015). *Heart failure readmission reduction through care coordination.* Journal of Cardiac Failure, 21(8), S77-S78. doi: https://doi.org/10.1016/j.cardfail.2015.06.242

Fredericks, S., Beanlands, H., Spalding, K., & Da Silva, M. (2010). *Effects of the characteristics of teaching on the outcomes of heart failure patient education interventions: A systematic review.* European Journal of Cardiovascular Nursing, 9(1), 30-37. doi: 10.1016/j.ejcnurse.2009.08.002

Goldenberg, R., & Punthakee, Z. (2013). *Definition, classification and diagnosis of diabetes, prediabetes and metabolic syndrome.* Canadian Journal of Diabetes, 37, S8-S11. https://doi.org/10.1016/j.jcjd.2017.10.003

Hayes, E., & Kalmakis, K. A. (2007). *From the sidelines: Coaching as a nurse practitioner strategy for improving health outcomes.* Journal of the American Academy of Nurse Practitioners, *19*(11), 555-562. https://doi.org/10.1111/j.1745-7599.2007.00264.x

Hibbard, J. H., & Greene, J. (2013). *What the evidence shows about patient activation: Better health outcomes and care experiences; fewer data on costs.* Health Affairs, 32(2), 207-214. doi: 10.1377/hlthaff.2012.1061

Iverson, C. (2007). *AMA manual of style: a guide for authors and editors* (No. 001.818). American Medical Association. doi: 10.1093/jama/9780195176339.001.0001

Kim, H., Ross, J. S., Melkus, G. D., Zhao, Z., & Boockvar, K. (2010). Scheduled and unscheduled hospital readmissions among diabetes patients. *The American journal of managed care*, *16*(10), 760.

Jensen, M. E., Pease, E. A., Lambert, K., Hickman, D. R., Robinson, O., McCoy, K. T., ... & Ramirez, J. (2013). Championing person-first language: a call to psychiatric mental health nurses. *Journal of the American Psychiatric Nurses Association*, *19*(3), 146-151. doi: 10.1177/1078390313489729. Epub 2013 May 22.

Jeon, S. M., & Benavente, V. (2016). Health Coaching in Nurse Practitioner–led Group Visits for Chronic Care. *The Journal for Nurse Practitioners*, *12*(4), 258-264. doi: 10.1111/j.1745-7599.2008.00379.x

Johnston, S., Irving, H., Mill, K., Rowan, M. S., & Liddy, C. (2012). The patient's voice: an exploratory study of the impact of a group self-management support program. *BMC Family Practice*, *13*(1), 65. https://doi.org/10.1186/1471-2296-13-65

Kendrick, J. M., Wilson, C., Elder, R. F., & Smith, C. S. (2005). Reliability of Reporting of Self-Monitoring of Blood Glucose in Pregnant Women. *Journal of Obstetric, Gynecologic, & Neonatal Nursing*, *34*(3), 329-334. https://doi.org/10.1177/0884217505276306

LaDonna, K. A., Bates, J., Tait, G. R., McDougall, A., Schulz, V., Lingard, L., ... & Marshall, D. (2017). Who is on your health-care team? Asking individuals with heart failure about care team membership and roles. *Health Expectations*, *20*(2), 198-210. doi.org/10.1111/hex.12447

Ledwith, M. (2011). *Community development: A critical approach.* Policy Press. Bristol: Policy Press.

Link, B. G., & Phelan, J. C. (2006). Stigma and its public health implications. *The Lancet*, *367*(9509), 528-529. doi: https://doi.org/10.1016/S0140-6736(06)68184-1

Löfvenmark, C., Karlsson, M. R., Edner, M., Billing, E., & Mattiasson, A. C. (2011). A group-based multi-professional education programme for family members of patients with chronic heart failure: Effects on knowledge and patients' health care utilization. *Patient Education and Counseling*, *85*(2), e162-e168. doi: 10.1016/j.pec.2010.09.026

MacDonald-Rencz, S., & Bard, R. (2010). The role for advanced practice nursing in Canada. *Nursing Leadership (Toronto, Ont.), 23*, 8-11. doi:10.12927/cjnl.2010.22265

Markle-Reid, M., Ploeg, J., Fraser, K. D., Fisher, K. A., Bartholomew, A., Griffith, L. E., ... & Upshur, R. (2018). Community Program Improves Quality of Life and Self-Management in Older Adults with Diabetes Mellitus and Comorbidity. *Journal of the American Geriatrics Society*, *66*(2), 263-273. doi: 10.1111/jgs.15173

Meng, K., Musekamp, G., Schuler, M., Seekatz, B., Glatz, J., Karger, G., ... Faller, H. (2016). *The impact of a self-management patient education program for patients with chronic heart failure undergoing inpatient cardiac rehabilitation*. Patient Education and Counseling, 99(7), 1190-1197. doi: 10.1016/j.pec.2016.02.010

Miller, W. R., & Rollnick, S. (2012). *Motivational interviewing: helping people change* (3rd ed.). New York, N.Y.: Guilford Press, p. 29.

Centre for Disease Contrl and Prevention. (2007). *National Diabetes Fact Sheet*. Retrieved from: http://www.cdc.gov/diabetes/pubs/estimates07.htm#1.

Neal, W. (2015, April 3). *Better patient education for improved engagement and compliance*. Patient Safety and Quality Healthcare. Retrieved from https://www.psqh.com/analysis/patient-education-better-patient-education-for-improved-engagement-and-compliance/

Nielsen-Bohlman, L., Panzer, A., Kindig, D. (2004). *Health literacy: A prescription to end confusion.* Institute of Medicine of National Academics. Washington, D.C.: National Academies Press.

Peterson, P. N., Shetterly, S. M., Clarke, C. L., Bekelman, D. B., Chan, P. S., Allen, L. A., ... Masoudi, F. A. (2011). Health literacy and outcomes among patients with heart failure. *JAMA*, *305*(16), 1695-1701. doi: 10.1001/jama.2011.512

Reale, R., Tumminia, A., Romeo, L., La Spina, N., Baratta, R., Padova, G., ... & Frittitta, L. (2018). Short-term efficacy of high intensity group and individual education in patients with type 2 diabetes: a randomized single-center trial. *Journal of endocrinological investigation*, 1-7.

Reynolds, A. (2009). Patient-centered care. *Radiologic Technology*, *81*(2), 133-147. Retrieved from http://www.radiologictechnology.org/content/81/2/133.short

Tu, C. F., Lin, J. R., & Yang, S. R. (2016). Combining community resources and utilizing creative health education for improving diabetes support group functions. *Diabetes Research and Clinical Practice*, *120*, S164. https://doi.org/10.1016/S0168-8227(16)31354-7

Van Nes, M., & Sawatzky, J. A. V. (2010). Improving cardiovascular health with motivational interviewing: A nurse practitioner perspective. *Journal of the American Academy of Nurse Practitioners*, *22*(12), 654-660.

Yancy, C. W., Jessup, M., Bozkurt, B., Butler, J., Casey, D. E., Drazner, M. H., ... & Johnson, M. R. (2013). 2013 ACCF/AHA guideline for the management of heart failure: A report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines. *Journal of the American College of Cardiology*, *62*(16), e147-e239. doi: 10.1016/j.jacc.2013.05.019

Zwar, N., Harris, M., Griffiths, R., Roland, M., Dennis, S., Powell Davies, G., & Hasan, I. (2017). *A systematic review of chronic disease management*. Retreived from https://openresearch-repository.anu.edu.au/bitstream/1885/119226/3/final_25_zwar_pdf_85791.pdf