Received: 1 March 2018 | Revised: 29 June 2018 | Accepted: 3 July 2018

DOI: 10.1111/hsc.12628

ORIGINAL ARTICLE

WILEY Health and Social Care in the community

'I'm on the train and I can't stop it': Western Canadians' reactions to prediabetes and the role of self-compassion

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Funding information
Michael Smith Foundation for Health Research, Grant/Award Number: 17150 and 5917; Research Manitoba

Abstract

Prediabetes, a condition characterised by impaired glucose regulation, is on the rise worldwide. This condition puts people at risk for cardiovascular disease, and 50% of people with prediabetes will develop type 2 diabetes (T2D). People with prediabetes can reduce their risk of developing T2D through lifestyle changes such as regular physical activity and healthy eating. However, the experience of health risks can be associated with negative reactions that can undermine people's ability to self-regulate the health behaviours that would reduce such risk. Self-compassion, or treating oneself kindly in the face of challenge, is known to help people manage negative emotions and facilitate self-regulation. Therefore, self-compassion may be helpful for people with prediabetes who have to manage their health behaviours in the context of a health threat. The purpose of this study was to explore how people, from a small Canadian city who learn that they have prediabetes, react emotionally to their prediabetes diagnosis. We also explored participants' receptivity to applying self-compassion in the context of their prediabetes. Twenty-one adults, recently notified by their doctors as having HbA1c scores indicative of prediabetes (M_{age} = 57.76, *SD* = 5.43), engaged in a semi-structured interview between June 2017 and January 2018. Inductive thematic analysis was used to analyse the data and four themes emerged. Participants' reactions to learning that they had prediabetes were characterised by (a) distress and concern, (b) downplay of T2D risks, (c) guilt and shame, and participants were receptive to (d) self-compassion as a beneficial approach to take in relation to their prediabetes. Findings suggest that people experience negative reactions to their prediabetes diagnosis yet are receptive to self-compassion, which could mitigate these reactions. These findings can inform lifestyle behaviour change programmes for individuals living with prediabetes by providing a better understanding of their perspectives of disease diagnosis.

KEYWORDS

adults, diagnosis, prediabetes, qualitative research, self-compassion, worry

1 | INTRODUCTION

Prediabetes afflicts millions of people worldwide, with its prevalence estimated to increase to over 470 million people by 2030 (Whiting, Guariguata, Weil, & Shaw, 2011). Prediabetes is characterised by impaired glucose regulation and increased risk of type 2 diabetes (T2D; Buysschaert & Bergman, 2011). Over half of people with prediabetes develop T2D (Anderson, Freedland, Clouse, & Lustman, 2001). Such a diagnosis often involves physical (e.g., tension, fatigue) and psychological (e.g., anger, denial, depression) consequences

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to those at risk (National Institute for Health and Care Excellence, 2005, as cited in Diabetes.co.uk, 2018). Prediabetes is a reversible condition whereby one's risk can be reduced through physical activity and healthy eating (Perreault et al., 2012; Tabá, Herder, Rathmann, Brunner, & Kivimäk, 2012). However, changing these behaviours requires self-regulation (Terry & Leary, 2011), such as goal-setting, making adjustments, and coping with set-backs (Baumeister & Heatherton, 1996; Terry & Leary, 2011).

Adherence to physical activity and healthy eating may be more difficult for people with prediabetes than the general population (e.g., Geiss et al., 2010) as they face self-regulatory challenges inherent to health behaviour change, while also being at risk for a chronic condition. Facing the risk of developing a chronic condition is associated with negative emotions, which pose added self-regulatory challenges (Baumeister & Heatherton, 1996; Gilbert et al., 2010). Negative emotions can undermine self-regulation, by using up self-regulatory resources (Schmeichel, 2007; Terry & Leary, 2011) which can reduce people's abilities to make good decisions (Schwarz & Clore, 2003), including those affecting their health. If people with prediabetes experience negative affect, these reactions may interfere with their self-regulation of health behaviours that mitigate their risk.

Few researchers have explored individuals' understanding of T2D risk (Youngs, Gillibrand, & Phillips, 2016), including how people react emotionally (Ritholz, Beverly, & Weinger, 2011). Existing research denotes that people with prediabetes experience guilt about having brought the health risk upon themselves through their past behaviour and for not doing enough in the present to manage their risk (Andersson, Ekman, Lindblad, & Friberg, 2008). People also experience distress, fear and anxiety about their future health (Troughton et al., 2008). Alternatively, people living with prediabetes downplay risk factors such as being overweight or question medical test results (Eborall, Davies, Kinmonth, Griffin, & Lawton, 2007). These few studies shed preliminary insight into the negative reactions that can accompany prediabetes. The undermining effect of negative reactions to living with T2D has been documented as interfering with self-regulation (Schulman-Green, Jaser, Park, & Whittemore, 2016).

Self-compassion may offer people with prediabetes an adaptive way of dealing with health threat and failed efforts towards behavioural changes (Friis, Consedine, & Johnson, 2015). Self-compassion, relating to oneself with care during challenge (Neff, 2003), involves: (a) being kind to oneself (self-kindness), (b) appreciation that one is not alone in suffering (common humanity) and (c) viewing negative thoughts/emotions in a balanced manner (mindfulness). In their narrative review, Sirois and Rowse (2016) outlined how each of these components may help those facing chronic conditions (e.g., individuals with prediabetes). Through self-kindness, people with prediabetes can counter self-criticism when they struggle to engage in risk-reducing behaviours. Common humanity may help people with prediabetes view personal health threats in the larger context of the challenges that everyone faces in life, which may reduce isolated feelings. Finally, through being mindful, self-compassion may help people with prediabetes be aware, in a balanced manner, of the negative emotions they may experience in relation to their health condition rather than ruminating about or ignoring these emotions.

What is known about this topic

- A small number of studies demonstrate that people who are living with prediabetes experience confusion about their condition as well as negative emotions.
- Self-compassion can help people manage negative emotions and has been found to help people self-regulate their health behaviours.

What does this paper add

- Emotional reactions are assessed related to prediabetes among people for whom the knowledge of a prediabetes diagnosis is more recent than that of participants studied in the past.
- This is the first study, to our knowledge, to explore participants' receptivity to self-compassion, a resource that could help people with prediabetes manage their emotions and self-regulate health behaviours that could improve their health.

Research supports the theoretical position that self-compassion is beneficial for people with chronic conditions. Self-compassion is associated with lower perceived and physiological stress and adaptive self-regulation of health promoting behaviours (see Sirois & Rowse, 2016, for a review). Further, self-compassion is associated with lessened T2D distress (Tanenbaum, Adams, Gonzalez, Hanes, & Hood, 2018). Individuals with T2D who underwent a self-compassion intervention reported less distress about their T2D at intervention-end and follow-up than wait-list controls (Friis, Johnson, Cutfield, & Consedine, 2016). Self-compassion may also help people with prediabetes manage negative reactions as they try to reduce their risk through lifestyle changes. Though self-compassion may be beneficial for people at risk for T2D (Sirois & Rowse, 2016), some people are fearful of self-compassion because they feel that they do not deserve to treat themselves in this way, view it as a weakness, or are unfamiliar with the construct (Gilbert & Procter, 2006; Kelly, Carter, Zuroff, & Borairi, 2013). To date, no qualitative research has aimed to understand self-compassion for individuals at risk of T2D.

Given that limited research is available about how individuals react to a prediabetes diagnosis (Youngs et al., 2016), more research is warranted. Therefore, this study's first purpose was to explore how individuals react upon learning that they have prediabetes. This exploration will add to past research and help identify if the experience of prediabetes is ripe with negative reactions that may undermine self-regulation of health behaviours and, in turn, mitigate further risk. To date, there are few qualitative studies that address individuals'

emotional response to prediabetes diagnosis in comparison to those assessing other experiences, including how people interpret the label (e.g., Hindhede & Aagaard-Hansen 2015), understand associated causes and risks (e.g., Troughton et al., 2008) or outline their likelihood of taking action (e.g., Hindehede & Aagaard-Hansen, 2015). Further, research that does explore emotional responses includes participants who are interviewed more than 1 year postdiagnosis or time since diagnosis is not reported (e.g., Hindhede & Aagaard-Hansen, 2015). Exploring peoples' reactions to T2D risk as soon as possible after diagnosis should provide valuable information about their reactions. A second purpose was to explore individuals' experiences with and receptivity to being self-compassionate. This exploration can provide information for researchers and healthcare professionals considering whether incorporating self-compassion training for people with prediabetes may be necessary and well-received.

2 | METHODS

2.1 | Procedure

This study was part of a larger project where people with prediabetes participated in a 3-week community-based lifestyle intervention in Western Canada. Participants were recruited between May 2017 and January 2018 through a private medical laboratory. A monthly newsletter was sent out to all family physicians to inform them of the larger project, including the aim, scope and procedure of the project and intervention. At the end of each month, physicians received a fax from the laboratory listing potentially eligible participants (having HbA1c scores between 5.7% and 6.4%). These participants had undergone routine bloodwork as directed by their physician. Physicians, informed about the project, indicated on a check box whether their patients were cleared for exercise and could be contacted for potential participation in the *Small Steps for Big Changes* programme. Mail outs were then sent to these individuals by the private blood requisition laboratory, inviting them to volunteer for the study.

Upon receiving ethical approval from the university institutions' ethics boards, interested and eligible participants were contacted by the first and second authors via telephone and/or email. To be eligible for the present study, participants had to: (a) be between 18 and 65 years old, (b) be able to read and speak English, and (c) have prediabetes (American Diabetes Association's [ADA], 2016) as measured by HbA1c = 5.7%–6.4% (n = 20) or complete the ADA risk questionnaire score indicating increased risk (>5; n = 1) within the past year. Individuals diagnosed with T2D were ineligible. Informed consent was obtained from participants prior to study commencement.

An exploratory qualitative design was chosen to gain an in-depth understanding of participants' perspectives (Ritholz et al., 2011). An interview guide was developed based on an extensive literature review (see Table 1 for sample questions from the interview guide; e.g., Andersson et al., 2008; O'Brien et al., 2016; Troughton et al., 2008). Interviews were conducted by the first two authors. The interview guide was piloted with two participants. After piloting, the research team discussed the guide and interview process, which resulted in slight modifications to the guide (e.g., addition/removal of question(s), question order). To maximise participant convenience and minimise burden, in-person (n = 2) or telephone (n = 19) interview options were provided. All interviews were audio-recorded and lasted 39–79 min (M = 56). Interviews were transcribed verbatim, reviewed by the second author and sent to participants for member checking (Creswell & Miller, 2000). Participants received a $20 gift card honorarium.

2.2 | Data analysis

An inductive thematic analysis was conducted using Braun and Clarke's (2006) six phases that allow for identifying, analysing and reporting themes within data. To aid in trustworthiness, a collaborative approach to analysis (Creswell, 2013) was conducted whereby

TABLE 1 Sample questions from the interview guide

Interview guide section and topic	Sample interview guide questions
Section 1: General introduction, rapport building, demographic information	• Review of study purpose, reminder of confidentiality and anonymity. • Gender, age, length of prediabetes knowledge, rapport building. • Can you tell me a bit about yourself?
Section 2: Understanding the condition and initial perceptions	• I understand that you recently found out that you are at risk for T2D. Can you tell me a little about this experience? • Tell me what you know about being prediabetic.
Section 3: Perceptions of personal role in having prediabetes and reaction to risk	• Why do you think you are at risk for T2D? • What concerns, if any, do you have about being prediabetic?
Section 4: Presentation of self-compassionate and self-critical ways people may respond to risk	• [Interviewer defines self-compassionate and self-critical reactions]. Can you tell me which reaction rings most true for you? • Why do you take this approach? • What would it feel like to take the other approach described?

three researchers independently coded three transcripts and met to discuss themes and subthemes to ensure data were presented in a comprehensive manner. Once main themes and subthemes were identified, relevant quotations for each theme were selected, indicative of participants' perceptions and representative of the sample. Coding discrepancies were discussed until agreement was reached (e.g., theme labels, quotation placement). Authors' agreed that data saturation had occurred when core themes were well-established and new constructs no longer emerged (Guest, Bunce, & Johnson, 2006).

3 | FINDINGS

Twenty-one participants (3 males, 18 females) engaged in a semi-structured interview upon learning they had prediabetes, prior to involvement in the lifestyle intervention. Participants ranged from 47 to 65 years old and all identified as Caucasian. Knowledge of their prediabetes diagnosis ranged from ≤1 month to 1 year, with most participants (n = 15) receiving their diagnosis ≤3 months from the interview. Additional demographic information is available in Table 2.

In each section, overall findings are described and supported by quotations. Results are organised in four themes: (a) distress and fear, (b) denial and downplay of risks, (c) guilt and self-criticism, and (d) self-compassion. Participants' names were replaced with pseudonyms.

TABLE 2 Demographic information of participants

Gender	
Male	3
Female	18
Age (years)	
M	57.76
SD	5.43
Range	47–65
Length of prediabetes Knowledge (months)	
M	4.16
SD	3.98
Range	≤1 month to 1 year
Marital status	
Married	13
Divorced	1
Single	3
Did not disclose	4
Employment status	
Full-time	4
Part-time work	5
Not working	2
Retired	10

Note. *M*, mean; *SD*, standard deviation.

3.1 | Distress and fear

Distress and fear were at the forefront of participants' perceptions surrounding their prediabetes diagnosis. Participants vocalised concern about the general diagnosis including Linda and Janet, respectively: "What concerns do I have? That I'm even here (laughs)…that I'm even in the realm of possibility of developing diabetes" and

> There's a big element of worry…like I'm on the train and I can't stop it. You get that worry of, "are you going to be able to stop this from getting worse?"… like "whoa, what's going on here?"…I don't want to become diabetic, that would be my main concern, I don't want what comes with that.

Other participants expressed concern underpinned with fear about their future health. James recognised a need to make dietary changes: "The worry is that if I don't deal with it, then it'll go into full [diabetes]." Participant also identified specific concerns that emerged in three areas: (a) physical conditions associated with T2D, (b) personal or family experiences, and (c) adaptions to one's current lifestyle. These subthemes are intertwined within one's dialogue; some overlap occurs between subthemes below.

3.1.1 | Physical conditions associated with T2D

All participants spoke of physical effects should they develop T2D. When asked how she felt about her diagnosis, Janet outlined: "You hear about people with diabetes having amputations all the time, worried about stuff like that…left me puzzled, but fearful." Maria also discussed her physical concerns: "I know that diabetics can have issues with circulation, there's issues with blindness or eyesight." Many of the participants' physical concerns were due to an increased risk of other health issues because of T2D, as outlined by Donna: "Absolutely [I'm worried] because of how it would affect my eyes or lack of feeling in lower limbs…and heart disease and strokes." Participants also expressed concern related to the combination of existing health problems coupled with T2D. For example, Ted discussed his concern about how making the dietary changes necessary to manage his T2D may conflict with the current diet he follows to manage his diverticulitis:

> I'm worried because I know what I can eat that doesn't trigger my diverticulitis…now I'm thinking, if I change my diet—the nutritionist says you have to include more vegetables—I'm a little apprehensive because I don't want to set that into motion.

3.1.2 | Personal or family experiences

As evident from the above quotations, concern regarding potential physical complications associated with T2D often emerged based

on participants' interactions with relatives with T2D, as outlined by Deborah: "My father had diabetes and his mother. So health concerns, yeah I [have] concern; I don't want to develop diabetes. You're at higher risk for heart attack or stroke; as I get older, these things weigh on my mind." Witnessing one's family member(s) live with T2D raised concerned for many, leading to discussions around wanting to make lifestyle changes in hopes of preventing it: "I've seen the outcomes of the disease, when you see that within your own family…I don't want to go down that path, what else can I do here?, whether it's walking or the nutrition" (Donna). Other participants were emotional related to how T2D could affect their future, as outlined by Helen: "The concern will be if it gets to that stage right? It's a little bit fearful (pause) because (crying) I want to be around for my family."

3.1.3 | Adaptations to one's current lifestyle

Despite expressing desire to make lifestyle changes based on the physical, personal or family concerns associated with T2D, participants expressed concern about having to adapt their lifestyle. Many individuals identified distress surrounding adjustments required to their eating habits and associated sacrifices. Patricia vocalised her concern: "Yeah, 'will this ever end?'…What [T2D] actually means, the fear that I can't eat sweets anymore. Those are my concerns. I don't know what preventions I can take to offset it and don't want to give up sweets." One participant discussed how she had always been able to eat any food she wanted without consideration, which led to concern: "I guess I have to pay more attention to and cut my portion sizes down significantly" (Janet). Concerns related to exercise were illustrated by two participants who spoke about their hesitation with engaging in physical activity: "Exercise and I are pretty much enemies, but I'm willing to change my attitude" (Helen) and "The challenge will be making a definite commitment to exercise" (Carolyn). Similarly, participants discussed outlooks related to distress and deflation, often feeling overwhelmed in making behaviour changes: "The self-doubt, but I'm going through with it and hoping I will have a flash of brilliance" (Helen) and "'How am I going to do this?' It seems so overwhelming. I know I should ideally lose a hundred pounds to get back to…my ideal weight, but it seems like such an insurmountable mountain to climb that why even try?" (Eileen).

Other participants highlighted concern around how their lifestyle would change should they develop T2D. Shirley noted: "You don't ever want to go down that path and I don't like needles. Honestly I'm never going to get there…I'll do everything I need to do to prevent diabetes from happening." Ted reflected how his perceived changes required to manage his prediabetes were at odds with current lifestyle: "All my life, my mantra has been: 'growing old is mandatory, but growing up is optional'. I think it might be time to grow up a bit and look more at life if I want to live past 60 (laughter)." Finally, participants discussed concerns around whether it was too late to make lifestyle changes: "If I kept ignoring the sounds and ate every piece of sugar I got my hands on and became severely obese, I would assume that I'd get full-blown diabetes. The question is will I get it regardless of what I do? I wonder" (Robert).

3.2 | Denial and downplay of risks

Despite the concern around having prediabetes, participants often conveyed a sense of denial or downplayed prediabetes risks. Three participants outlined their thoughts upon learning they had prediabetes: "My first thought was 'I don't think it's going to kill me'" (Judy), "I didn't really know what to think, but I'm not at risk for anything yet so…" (Helen), and "I'm assuming that prediabetic doesn't mean any more than it's a warning sign and that I'm not definitely down a road that I can't change" (Cynthia).

Some participants downplayed their diagnosis because of the prevalence of T2D: "At that moment, I didn't think there's something seriously wrong because you hear people have diabetes all over the place, right? You can't really see that there's something physically wrong… I wasn't totally shocked, but certainly wasn't expecting it" (Laura). While others compared prediabetes to other health concerns they perceived as more serious: "It's not like you came home from the doctor saying 'guess what? I have spots on my lungs'" (Maria) and

> I don't know if I'm still in denial that it might not happen. I think I'm still thinking that before I get diabetes, I'll drop dead of a heart attack or stroke. Of the two beasts, I think cardiovascular will get me first. Maybe I'm not taking it seriously…life as usual other than a shot or a couple of pills and a more drastic change in diet. (Martha)

Robert discussed how gender played a role, whereby men tend to not worry about such risks until the severity I was unavoidable:

> I never really started worrying about it yet. The problem is guys don't worry about it until it hits them in the forehead (laughter). We compartmentalise, go on with life; you still gotta go to work, do your job…until the risk seems to be inevitable, that seems to be when you start worrying about it.

3.3 | Guilt and self-criticism

Participants were critical of lifestyle choices they felt led them to prediabetes and tended to criticise themselves about health behaviours upon receiving the diagnosis. Nancy and Patricia reflected on their personal attributions for being diagnosed with prediabetes: "At the end of everything I go 'ahh…I could've done more for myself today'" and "There's an element of 'okay, I knew I was doing this to myself, so you've made the bed, you sleep in it'." Kathleen placed blame on herself for not maintaining a healthy lifestyle: "You realise you are to blame…you know you are fully capable of getting exercise and maintaining a healthy diet, and when you don't, you realise you're the one to blame for that." When asked about how he reacted to his prediabetes diagnosis, Ted blamed himself for his past behaviour and for putting off change: "I've eaten like crap for the last

40–45 years. It's time to change and better myself…maybe I should have tried to control things earlier." Similarly, James discussed the internal process that occurred after making perceived poor eating choices: "Internally, you do that thing, 'what did you do that for?, why did you…? You beat yourself up internally. I don't know how to explain it…you sort of berate yourself, it's just a normal reaction." Similarly, Eileen noted: "It sickens me that I let myself get this out of control, but you get into a pattern and it's hard to break out of… I'm out of motivation to do it myself normally." Helen discussed the challenges associated with maintaining a healthy lifestyle and stated: "You sort of give up for a day or two until you realise you're judging yourself."

3.4 | Self-compassion

Participants' perceptions of self-compassion (or lack of) relative to risk for T2D emerged in three subthemes representing self-compassion: (a) common humanity, (b) self-kindness and (c) mindfulness (Neff, 2003).

3.4.1 | Common humanity

Many participants discussed being surrounded and united by others in prediabetes-related difficulties. Participants discussed experiences being broad struggles that affect many people: "I see it as worldwide, more so in North America; the food we're eating, the food that's put in stores. Our lifestyles are too fast and too furious" (Robert). Conversely, Katherine's common humanity perceptions were more proximal related to struggles experienced together in her social circle: "All our friends are about the same age so they're dealing with the same problems and trying to deal with those too." Several participants discussed how T2D prevalence helped lessen the struggle: "It seems like a lot more people are going 'oh yeah I'm prediabetic'; there were a couple guys at work that were prediabetic… you'd hear them talking and realise 'oh, there's another one'" (Robert).

Finally, some participants compared themselves with others who they considered to be suffering more than what they were personally experiencing with prediabetes. Although this aligns with the previous theme, Downplay of Risks, this extends beyond acknowledging that others are also suffering: "I'm a realist, I go 'whoa—it could have been way worse, it could have been a Type I; I could have been I'm at risk for stroke and I have high blood pressure'. I find those to be scarier" (Judy) and "There's a lot of people in a worse state than I am at, so it's like 'suck it up'; get over yourself, it's not that bad" (Michelle).

3.4.2 | Self-kindness

Participants outlined an understanding toward themselves in a time of adversity. Linda spoke of her understanding of self-kindness for her lifestyle choices: "I am now [self-kind], I never used to be. After years of counselling and dealing with mental health…we have to be compassionate with yourself and others. Being so critical doesn't serve people well." For Helen, this notion emerged when she discussed the realities of making a change in her exercise as challenging: "Being consistent about it. Keeping it up…if I miss one day, to forgive myself…be kind to myself like I'm kind to others." Katherine discussed the inner challenge she experienced with being both critical and kind to herself about her eating habits: "Part of me says 'you're smart enough to know better'—that's the beat me up part—the other part says 'you know you can do this' and 'you've done it before so just go with the flow and do what needs to be done'. I have two sides.".

Conversely, some participants reflected on how they put others first, before taking care of themselves and how this needed to change: "I just need to think of myself as worth it, worth the work" (Helen) and

> I've thought about doing something for years and it's always, "I'll start tomorrow". My daughter gets in the way… always an ongoing list of things and I put myself last. I always want to get everything taken care of that has to do with anybody else and I'm putting myself last. …I just never put myself first and I guess I have to start doing that. (Eileen)

3.4.3 | Mindfulness

While participants responded to their T2D risk with concern, others adopted a balanced approach, whereby they acknowledged their negative thoughts related to past behaviours and choices, while recognising the necessity to make changes with openness and clarity. Brenda noted a shift in reaction to T2D risk that reflects a constructive attitude of acceptance and a commitment to change: "I don't beat myself up for stuff I did before. I try to think more positive[ly] and fix it…I don't get that upset, kinda like 'that's okay' type of attitude…it can be fixed, don't worry about it too much." When Maria was asked about her initial reactions when receiving her prediabetes diagnosis, she responded in a balanced manner: "It wasn't much of a reaction, it was more of a realisation." Participants recognised that they were in control to make necessary changes: "It wasn't like 'oh no'. There wasn't a depressed feeling…more of an okay, matter of a fact: 'I need to be more serious about doing something to address this'" (Donna).

Finally, participants perceived their diagnosis as an opportunity for immediate lifestyle change that would reduce the risk of T2D, yet regardless of the result, have positive health effects. Maria adopted a common humanity approach, while outlining manageable changes she could adopt to reduce her risk:

> Part of me, at first, said "there are lots of diabetics in the world, but there are lots of complications so if you can prevent it why wouldn't you?"...Let's say I do develop diabetes, if I made lifestyle changes in advance whatever changes I need to make will not be as huge as if I'd made none…that's something you have to change downstream anyway so change it now.

Michelle discussed how she framed her diagnosis as a chance to make a change:

> I'm not "woe is me". I'm "okay, let's tackle this! Let's look at this as a challenge and try to put a positive spin". I am going to eat a little healthier and make sure I don't miss my workouts; do what I can and as much as I can so if I still end up getting it, I've done everything I could have and then I'll deal with the next step.

4 | DISCUSSION

Changing health behaviour offers avenues by which people with prediabetes can mitigate their T2D risk (Tabá et al., 2012). One factor that influences health behaviour self-regulation is emotion (Terry & Leary, 2011). The purpose of this study was to understand how individuals react emotionally to learning that they have prediabetes, which resulted in three themes: (a) distress and fear reactions, (b) denial or downplay of risk and (c) guilt and self-criticism. A second purpose was to explore experiences with, and receptivity to, applying self-compassion in this context which revealed varied experiences.

Aspects of prediabetes led to participants' distress and concern. Participants were concerned about progressing to T2D, experiencing physical ailments associated with T2D, and exacerbating current health conditions. These findings are consistent with past research where physical concerns (Eborall et al., 2007), uncertainty about seriousness of the diagnosis (O'Brien et al., 2016; Troughton et al., 2008) and implications for current health problems (Peel, Parry, Douglas, & Lawton, 2004) have been documented. These concerns may be fuelled by uncertainty around what a prediabetes diagnosis actually means and poor communication about the diagnosis by healthcare providers (O'Brien et al., 2016).

Participants reported reluctance about making the lifestyle changes to mitigate T2D risk. This reluctance related to the lifestyle sacrifices required and a lack of confidence to make changes are similar to findings by Andersson and colleagues (2008). This hesitation to embark on behaviour change was amplified by some participants' uncertainty about whether it was possible to avoid getting T2D—a finding documented by other researchers (Hindhede & Aagaard-Hansen, 2015; Troughton et al., 2008). Overall, the prospect of lifestyle change to manage risk added another element of distress and concern when receiving a prediabetes diagnosis.

While some participants reported experiencing distress and concern, others reported downplay or denial of risk. This denial was evident in a perspective shared by some that prediabetes is merely a warning sign experienced by many that is less serious than other illnesses. This idea, that prediabetes is an insignificant diagnosis, is consistent across a few studies (e.g., Eborall et al., 2007; Hindhede & Aagaard-Hansen, 2015). Further, some participants downplayed the health implications of T2D, expressing that not much would change about their life should they develop the condition. This view is at odds with research; even in prediabetes, individuals are at increased risk of cardiovascular problems (Buysschaert & Bergman, 2011).

This denial of risk may demonstrate participants' efforts to cope with their health risk. People are motivated to maintain a sense of self-integrity, including the capability of controlling important life outcomes, such as their health (Sherman & Cohen, 2006). People can react to self-integrity threats by discrediting or denying threatening information. The denial or downplaying of T2D risk and its implications may reflect participants' efforts to maintain self-integrity in the face of health risk. Another source for the denial may be a lack of understanding about what it means to have prediabetes (O'Brien et al., 2016; Troughton et al., 2008). Indeed, Troughton et al. (2008) suggest that confusion about prediabetes makes it difficult for people to ascribe meaning to the diagnosis. The polarised reactions that participants in this study exhibited—from distress and concern to minimisation and denial—reinforce confusion around prediabetes.

Participants also expressed guilt and shame relative to their prediabetes diagnosis. Participants commonly expressed self-blame for their past behaviour and its role in their prediabetes diagnosis. Participants felt further guilt and shame when failing, in the present, to stick to health behaviours. The guilt and shame reactions prevalent within our sample have been documented in the experience of other chronic illnesses (Trindade, Duarte, Ferreira, Coutinho, & Pinto-Gouveia, 2018), but have been less often mentioned in prediabetes research. One exception to this is Andersson and colleagues (2008) who noted participants' experience of guilt and shame for health behavioural transgressions.

These findings add to and build upon past research to document that the experience of prediabetes is wrought with negative emotions and reactions. These reactions may motivate people with prediabetes to change their health behaviour (Hindhede & Aagaard-Hansen, 2015; Peel, Douglas, & Lawton, 2007). There is reason to question whether these reactions are likely to lead to successful behaviour change. According to self-determination theory, motivation driven by guilt or fear is of low quality and unlikely to lead to sustained change (Ryan & Deci, 2000). Indeed, negative reactions compromise self-regulation (e.g., Gilbert et al., 2010), an effect documented among people living with T2D (Schulman-Green et al., 2016).

Self-compassion may offer people with prediabetes a way to manage negative reactions to a prediabetes diagnosis and their efforts to manage health behaviours. A unique finding of this study is that people appreciated and were receptive to self-compassion in the context of prediabetes. Participants discussed all aspects of self-compassion (common humanity, self-kindness, mindfulness) when asked about taking this kind approach to interpreting their prediabetes. This is promising given that self-compassion can reduce experiences of negative emotions, and facilitate self-regulation of health behaviour (Neff, 2003; Terry & Leary, 2011). While people with prediabetes recognise the value of being self-compassionate,

the widespread negative reactions—like distress, shame and denial—suggest that people in this population may not be exercising self-compassion.

This investigation has several strengths. First, the qualitative investigation adds to the limited research on how people respond to news that they have prediabetes (Youngs et al., 2016). This study explored people's reactions to *recently* learning about the diagnosis, representing a critical time when people interpret their situation and decide how to respond. Also unique to this paper is our exploration of participants' thoughts about and responsiveness to self-compassion as applied to their prediabetes experience. Given the potential self-compassion has as a way to relate to oneself during challenging times (Neff, 2003), exploring how people with prediabetes react is prudent.

Study limitations also warrant consideration. The sample represents a relatively homogeneous sample with regard to gender and ethnicity, despite recruitment through doctor referral, as all participants were Caucasian and only three men volunteered. Knowing that being diagnosed with and addressing prediabetes is multifaceted based on peoples' diverse social class, ethnic and gendered backgrounds (e.g., Kautzky-Willer, Harreiter, & Pacini, 2016; Yip, Sequeira, Plank, & Poppitt, 2017), future research is needed to replicate such work in more diverse samples to further explore these constructs. We speculate that few men volunteered for our study because men tend to be less likely to seek healthcare (e.g., Mansfield, Addis, & Mahalik, 2003), reducing the likelihood that they would have bloodwork completed which was a necessary step for eligibility. Second, women are more likely than men to participate in research for many psychosocial reasons (e.g., Lobato, Mendoza, Sims, & Chin, 2014). Another factor limiting generalisability is that physicians had to clear individuals with HbA1c scores in the prediabetes range for exercise, as recruitment for the larger project. Thus, individuals not cleared for exercise by a physician were excluded from this study. As this study was part of a larger project whereby participants had not yet engaged in the lifestyle intervention at the time of their interview, participants may have had a different perspective if they had been interviewed after completing the intervention. For example, researchers have found that people's initial expectations for behaviour change can be inflated (Trottier, Polivy, & Herman, 2009) so our participants' may have had a higher sense of optimism around their diagnoses and potential for behaviour change than they may have had postintervention. Therefore, findings should be interpreted with caution.

Several practical recommendations and areas for future research should be noted. First, healthcare professionals should be aware of the negative reactions people have upon learning about their prediabetes diagnosis and take steps to reduce these reactions. Healthcare professionals could offer patients with prediabetes a clear explanation of what prediabetes is, the health implications, the likelihood that they will develop T2D, and the risk-reducing efficacy of lifestyle changes (O'Brien et al., 2016). This clear, unambiguous communication about prediabetes may mitigate distress associated with uncertainty. Findings from this present study suggest that there is value in promoting a self-compassionate approach to relating to one's prediabetes experience. Self-compassion is associated with adaptive emotional reactions (e.g., lower stress, shame and anxiety) to chronic health conditions and is associated with health behaviours (Sirois, Kitner, & Hirsch, 2015). Efforts to increase self-compassion have been successful among a variety of populations, including people with T2D (Friis et al., 2015). Researchers should explore whether self-compassion can help people with prediabetes lessen the negative responses typical upon diagnosis and to self-regulate the health behaviours that will help them mitigate their T2D risk.

This study highlights the negative reactions that people often experience in response to a prediabetes diagnosis. Understanding these reactions is important given the role that emotions play in self-regulation of health behaviours (Terry & Leary, 2011). Managing health behaviours is crucial for people with prediabetes who are at a critical juncture where they can mitigate their risk of developing T2D through successful behaviour change. This study also takes preliminary steps in exploring participant receptivity to self-compassion, which holds promise as an important coping strategy that should help people with prediabetes manage the emotions that accompany diagnosis and behaviour change challenges.

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How to cite this article: Strachan SM, Bean C, Jung ME. 'I'm on the train and I can't stop it': Western Canadians' reactions to prediabetes and the role of self-compassion. *Health Soc Care Community*. 2018;26:979–987. https://doi.org/10.1111/hsc.12628

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