Personalised Care-and-Support-Planning in Singapore: Qualitative interviews with people living with diabetes

Lazarus, Monica; Yew, Tong Wei; Tan, Wee Hian; Venkataraman, Kavita; Valderas, Jose Maria; Young, Doris Yee Ling; Shyong, Tai E; Weng Keong, Victor Loh

DOI: https://doi.org/10.3399/BJGPO.2023.0055

To access the most recent version of this article, please click the DOI URL in the line above.

Received 20 April 2023
Revised 20 August 2023
Accepted 24 August 2023

© 2023 The Author(s). This is an Open Access article distributed under the terms of the Creative Commons Attribution 4.0 License (http://creativecommons.org/licenses/by/4.0/). Published by BJGP Open. For editorial process and policies, see: https://bjgpopen.org/authors/bjgp-open-editorial-process-and-policies

When citing this article please include the DOI provided above.

Author Accepted Manuscript
This is an ‘author accepted manuscript’: a manuscript that has been accepted for publication in BJGP Open, but which has not yet undergone subediting, typesetting, or correction. Errors discovered and corrected during this process may materially alter the content of this manuscript, and the latest published version (the Version of Record) should be used in preference to any preceding versions.
Personalised Care-and-Support-Planning in Singapore: Qualitative interviews with people living with
diabetes

Monica Ashwini Lazarus, MPH (mdcemal@nus.edu.sg) (ORCID iD: 0000-0001-7718-343X)

Tong Wei Yew, MBBS, MRCP (ORCID iD: 0000-0002-7349-3841)

Wee Hian Tan, MBBS, M.Med (ORCID iD: 0000-0003-1114-4133)

Kavita Venkataraman, MBBS, PhD (ORCID iD: 0000-0002-3139-6998)

Jose M Valderas, MPH, PhD (ORCID iD: 0000-0002-9299-1555)

Doris Young, MBBS, MD, FRACGP (ORCID iD: 0000-0002-1533-3639)

Tai E Shyong, MB ChB (with commendation), MRCP (UK), FRCP (ORCID iD: 0000-0003-2929-8966)

Victor Loh Weng Keong, MBBS, M.Med, MHPE (mdclwkv@nus.edu.sg) (ORCID iD: 0000-0002-8836-7901)
1Department of Medicine, Yong Loo Lin School of Medicine, National University of Singapore (NUS)

2Department of Medicine, National University Hospital (NUH)

3National University Polyclinics (NUP)

4Saw Swee Hock School of Public Health, National University of Singapore (NUS)

5Department of Family Medicine, National University Health System (NUHS)
ABSTRACT (242 words)

Background: Personalised care-and-support-planning (CSP) is a person-centred approach for the care of persons living with long-term conditions. PACE-D or Patient Activation through Community Empowerment/ Engagement for Diabetes Management adapts the Year of Care Partnerships (YOCP) approach to CSP in the UK for persons living with diabetes at the Singapore polyclinic; multi-storey primary care hubs that provide affordable, multidisciplinary, comprehensive, and high-throughput public healthcare for the multi-ethnic, multi-lingual Singapore population.

Aim: To explore the experience of PACE-D enrolled persons living with diabetes with personalised CSP at Singapore polyclinics.

Design and Setting: Qualitative interviews of persons living with diabetes who experienced personalised CSP at National University Polyclinics (NUP) between July 2020 and November 2021.

Method: PACE-D enrolled persons living with diabetes who experienced personalised CSP were purposively sampled. In-depth semi-structured interviews were recorded, transcribed, and analysed using Braun & Clarke’s reflexive thematic analysis.

Results: 52 patients participated in the study. Patients reported that the care-planning-letter (CPL) prompted reflection and patient preparation for CSP conversations. PACE-D programme coordinators amplified self-management by playing advocate and confidant beyond administrative duties. CSP providers were perceived as partners-in-care, with more time to listen compared to usual consultations. Patient engagement was affected by language confidence. With adequate time and support, patients increased in confidence and agency both in CSP engagement and diabetes self-management.

Conclusion: While language confidence may affect patient engagement, personalised CSP shows promise for strengthening patient engagement and self-management among persons living with diabetes at the Singapore polyclinic.
Keywords:
Diabetes Mellitus; Personalised Care and Support Planning; Primary Health Care

How this fits in

Active engagement and personal self-management are essential for patients to live well with diabetes and other long-term conditions. The Year of Care Partnerships (YOCP) person-centred approach to personalised care-and-support-planning (CSP) reframes the purpose of care from ‘helping the person to manage their condition’ to ‘helping the person to live well with their condition’. This is one of the first few studies to investigate the patient experience of CSP beyond the UK. Conducted at the Singapore polyclinics, this research shows that personalised CSP is generally well received and promises to be an effective means to strengthen patient engagement and self-management by persons learning to live well with their diabetes in a multicultural Asian primary care context.

MAIN TEXT

Introduction (573 words)

Primary healthcare is globally challenged to provide efficient, effective, personalised care for the burgeoning demographic of persons living with long-term conditions (LTC) (1-3). Personalised care-and-support-planning (CSP) or the “anticipatory, negotiated discussion or series of discussions between a patient and a health professional to clarify goals, options and preferences and develop an agreed plan of action based on this mutual understanding”(4) is a theory-informed, person-centred approach that engages patients to live well with their diabetes and other LTC. With decades of iteration in the UK, the Year of Care Partnerships (YOCP) approach to personalised care-and-support-
planning (CSP) reframes the purpose of LTC care from ‘helping the person to manage their condition’ to ‘helping the person to live well with their condition’. (5)

With a geographical location in the WHO Western Pacific that is projected to be the global epicentre of diabetes for the next century, Singapore’s multi-ethnic residents are a socio-cultural English-speaking microcosm of the region. With alarming rates of diabetes (Singapore prevalence 14.9%, UK prevalence 8.2%, global prevalence 10.9%), and a national “War on Diabetes” (2016), PACE-D or Patient Activation through Community Empowerment/Engagement for Diabetes Management adapts the person-centred YOCP approach to personalised CSP beyond the UK to the multi-cultural multi-lingual public primary care setting at the Singapore polyclinic. (9, 10)

Designed for accessible, comprehensive, and efficient primary care, Singapore polyclinics are high throughput multidisciplinary primary care hubs with in-house laboratory and radiological services. Healthcare providers are organised into teamlets comprising two family physicians, one nursing care manager, one care coordinator, and an occasional clinical pharmacist, with each teamlet providing care for approximately 5000 empanelled patients. Time and resource constraints hinder provider’s explorations of patient’s intrinsic goals and concerns, often leaving providers little opportunity to actively support patients in what matters most in living well with their diabetes based on their authentic goals and values.

The elements of PACE-D have been described elsewhere (Figure 1). Preparation of patients starts with the early receipt of the “care-planning-letter” (CPL). As advised by patients in focus group discussions convened for the operations pilot, the CPL takes the form of a handy A5-sized booklet that charts patients’ latest investigation results including HbA1C as colourful infographics, with spaces intentionally left blank for enrolled patients to pen their thoughts (Supplementary Box 1). An extended 20-30-minute timeslot for each personalised CSP Conversation instead of a “usual” 10–12–
minute consultation is embedded within the healthcare system delivery process. Consistent with evidence on the positive effects of person-centredness on self-management and health outcomes (5, 17), trained providers intentionally explore patient goals so that jointly made decisions respectful of patients’ values may be made. Actionable goals are recorded on the care planning letter as reminders for patients and documented in the medical records for subsequent review by providers. Actions on decisions may range from mutually agreed-upon weight-loss goals to attending socially prescribed activities linked by the PACE-D programme coordinator. Patients are given appointments for interim consultations to review their progress until their next annual personalised CSP.

While evidence of improved disease outcomes and better patient (9) experience have been garnered for more than a decade in the UK, the novelty of this paper is that we study the experience of the linguistically and culturally diverse Singapore primary care patients towards personalised CSP. Nested in the PACE-D main evaluation, this study will inform the main evaluation, and lend insight into how personalised CSP may be optimised for further implementation in Singapore primary care(10) and possibly beyond Singapore.

**Methods** (466 words)

Semi-structured interviews were conducted between July 2020 and November 2021 by two research trained non-clinical interviewers (ML & ASL). We recruited persons living with diabetes who underwent personalised CSP with PACE-D teamlets at Pioneer and Jurong Polyclinics of the National University Polyclinics (NUP) cluster. Participants were purposively sampled for diversity in terms of age, gender, and ethnicity(18). A preliminary topic guide was developed from our literature review (19) with input from key opinion leaders and the study team, and then piloted to assess suitability of questions (Supplementary Table 1).
Study participants provided written informed consent. Of the initial 55 participants, 46 were interviewed in English, three in Malay, and three in Mandarin. 15 interviews were conducted in-person at the study sites, 34 via phone, and three via Zoom amid COVID-19 restrictions. Three interviews were removed due to poor quality data (e.g., difficulty in understanding participant/background noise or conversation not recorded), resulting in a final sample of 52. Study participants received SGD50 (approximately GBP30) for participation. Interviews were conducted iteratively, with field notes taken after each interview. Interviews lasted 26 to 85 minutes, were audio-recorded, transcribed verbatim and de-identified prior to analysis. Non-English interviews were translated by native speakers before analysis.

Data was analysed concurrently with collection. Analysis was guided by Braun & Clarke’s reflexive thematic analysis framework – familiarization, generation of codes, searching for themes, reviewing of themes and defining themes.(20) Interviews were transcribed on MS Word and imported onto MS Excel, and organised for coding.(21) Analysis was initially conducted inductively to have a comprehensive understanding of the collected data, before moving to a more deductive nature in order to map the themes and codes to the overall process of personalised CSP as used in the Singapore polyclinics (Figure 1)

Three researchers (ML, research associate; VL, CSP practitioner, family physician; and KV, primary care physician and researcher) developed the codebook iteratively to guide analysis. ML read and coded all interview transcripts. VL and KV read several transcripts independently and reviewed the codes. To mitigate any risk of bias from having two interviewers (ML & ASL), we checked and found that codes and themes identified were not disproportionately attributed to the transcripts of any particular interviewer.
To ensure reflexivity, interviewers explained their backgrounds to participants prior to interviews and kept a reflexivity journal. The multidisciplinary research team (primary care, public health, and endocrinology) regularly met to critically debrief, reflect on underlying assumptions, and discuss the research data to attain consensus in the codes and themes. The study team judged that thematic saturation occurred two-thirds into recruitment. Recruitment continued beyond this in accordance with our goal of achieving heterogeneity through purposive sampling. A summary of our findings was shared with participants for their feedback. Our reporting conforms to the Consolidated Criteria for Reporting Qualitative Studies (COREQ) reporting guideline.

Results (2,045 words)

We interviewed fifty-two participants. The median participant HbA1C at time of interview was 7.4%. The demographic and clinical information of our participants (N=52) are available in Table 1. The themes and subthemes are summarised in Table 2.

All quotes are verbatim and include Singaporean English (Singlish) expressions which may appear unusual to readers accustomed to British English. The expression “lah” punctuates Singlish speech to indicate emphasis. Some edits in the quotes indicated by parentheses [...] have been added to increase clarity for the reader. We have included additional quotes to support the themes and subthemes in the Supplementary Table 2.

The main themes and subthemes demonstrate how persons living with diabetes experience the different elements within PACE-D, ranging from the experience of preparing for the consultation with the CPL to developing agency and creating goals for themselves.

The Importance of the Care-Planning-Letter (CPL)
The Care-Planning-Letter (CPL) in the form of a handy booklet that summarised the latest investigation results as coloured charts were mailed to PACE-D patients two weeks before their CSP appointment.

*A reflective prompt*

Instead of “just a printout” (P26) which was how patients described investigation results printed within typical consultations, words such as “eye opener” and “visual impact” (P11) were used to describe the CPL. For some, the CPL prompted reflection on “…what is it that can be improved, what is it that could have gone wrong” (P49), and sometimes nudged patients beyond mere contemplation onto the brink of action (25): “…it already is … a thought-provoking instrument…for someone to think and be serious about wanting to get in shape.” (P26)

*Preparation for the personalised CSP conversation*

The CPL prepared patients who engaged with it for more effective CSP conversations: “…when I [am] with the doctor [and hear] some of the questions that they asked, I think I am quite ready with the answer because I thought through it” (P49). The results were a ready “talking point” (P26) that spurred important discussion topics without need for “beating [around] the bush …” (P31).

With the CPL on hand, patients could enter more deeply into in the CSP conversation and therefore more deeply into their own self-care:

> “Once upon a time… only the doctor [was] looking at the screen [with the results] … But since you have [the CPL] in your hand and you receive it beforehand … you are ready, prepared to ask him some hard question[s]” (P31)

Being CPL-equipped shifted the provider-patient dynamic in favour of the patient; they now had a greater voice in the CSP process.
The challenge of language proficiency

In linguistically diverse Singapore, the CPLs were made available in English, Malay, and Mandarin Chinese. Nevertheless, language proficiency often challenged patient engagement with the CPL, and thereby with CSP itself. Given both spoken and written language proficiency may be related to culture and education levels, we provide the participants’ cultural group and highest level of education achieved with the quotes in this section:

“I asked myself, ‘How do I go about filling this [CPL]?’ I did not have the confidence...I don’t know how to” (P30, Chinese female, secondary school)

Patients who lacked confidence with the written language relied on family members, and often on the programme coordinator to read and to make entries in the CPL on their behalf:

“...old people face a lot of problems [laughs]. They have a hard time to express, like me too” (P25, Malay female, polytechnic diploma)

Patients reported that their confidence increased with each CSP cycle:

“...the first time when I get the form you sent me ... I still don’t really understand. The second time, I understand better. The third time also understand a bit more.” (P41, Chinese female, primary school)

The Role of the Programme Coordinator

The roles of the programme coordinator beyond administrative matters surfaced as an important theme in our study.

Ensured smooth running of programme

The programme coordinator’s main role was to ensure that PACE-D operations would occur smoothly despite the busyness of each day at the polyclinic. This included scheduling appointments, preparing
CPLs to be mailed off, linking patients with social care activities as directed by the CSP practitioner, and re-printing the CPL when needed:

"I told [the programme coordinator] I didn’t bring [the CPL]. I forgot so she... print out one more time" (P02)

Programme coordinator as advocate

Beyond administrative duties and merely taking “a quick glance” (P24) at the results booklet, the programme coordinator was noted for encouraging patients to actively engage with the CPL. This patient describes being assisted by the programme coordinator prior to the CSP conversation.

“[The programme coordinator] go through the [CPL] with me and tell me about my results. I...tell her that I want to exercise more, but I don’t know how to do it indoors to make myself burn out the calories...she just writes [this concern] down for me [on the CPL booklet, so that] later [I] can ask the doctor for.” (P36)

The programme coordinator’s role was described in terms that of a supporter and advocate:

“[The programme coordinator] ...actually gave me ...a kick in the ass, to let me think [about] why it [the results] became like this or how you should do to improve, and how to improve it [so that I] can check with the doctor [later].” (P33)

As a result, some patients were better prepared for the personalised CSP conversations that they “got a lot [more out of my conversation] with the doctor” because “normally I won’t talk about anything.” (P47)

Coming alongside with empathy
Beyond coordination and facilitation of CSP engagement, programme coordinators provided a safe empathetic space where authentic concerns were aired:

“So, ...you know just open up to [the programme coordinator] as well... I just throw it out actually like I, I don't feel like taking medication [small laugh] ... I think she can empathize...it's a totally different perspective from the doctors...the doctor he's health-trained, professionally trained, so he can look at the impact that your decision how it will affect you. ... [pause], the PACE-D staff is more a like er supplementary role to help the doctor in helping the patient improve on the health through the build-up of community, social [pause] activities...togetherness” (P10)

This made a difference in how patients engaged in the programme. Having “someone there to care for my health and...taking the effort...” encouraged patients to “put in effort in the whole programme” (P49).

The Value of the Personalised Care-and-Support-Planning (CSP) Conversation

The personalised CSP conversation was designed to be a meeting of experts – the CPL-equipped and prepared patient, and the trained CSP practitioner.

Healthcare provider as listener

Having been listened to in the CSP conversation was appreciated by participants. They observed that unlike “usual” consultations, CSP practitioners who could be a family physician, nurse care manager or pharmacist, patiently listened to their illness narrative during CSP:

“[The CSP Practitioner] has a lot of patience. He will explain things to you. Some doctors...just write, write, write, write, write okay, done, then did not say much. But this particular doctor did share with me a lot in different areas lah” (P30)
This patient appreciated how this CSP practitioner took time to listen:

“...the doctor was very good la, very good ah, he wanted to listen, he wanted to listen” (P25)

This yielded dividends in terms of greater patient engagement:

“I will be more open up to ask, more open up to find out how I can control better” (P24)

**Time for relational communication**

Consultation time set aside for the CSP allowed more constructive conversations to occur:

“...if the time is too short, we will sometimes forget what to ask” (P41).

The consultation ceased to feel rushed:

“[The CSP] was more thorough than my normal you know, hello-goodbye...now I’m a familiar face to them...the doctor was not in a rush to see me” (P47)

Even when pressed for time, practitioners managed somehow to not rush the patient:

“At least he did not give me the sense that he’s rushing,”; this made the consultation feel “a little more personal,” and “if I have a question, he has time to answer” (P49).

**Practitioners and patients as partners**

With more time for listening, most patients found the personalised CSP conversation to be less “instructional” and more “participatory” (P22). As described:

“...there’s dialogue and ok because we discussed, he nudged me, [at first] I resist a little bit but [later I] gradually opened up...it was a friendly thing...he was offering suggestions, but leaving a lot of suggestions to me” (P26)
More balance in the patient-provider power dynamic was also observed:

“...the consultation [has] now really change[d], where it’s a 2-way traffic ...” (P21)

This affected their perception of the CSP practitioner, with some describing the practitioner “… like a friend” (P16). Others used the word “personal” and “partners” who jointly worked towards patient goals:

“...the whole consultation was more...professional but it’s personal...The other one [“usual” consultation] is very professional...very data based. This one [personalised CSP] is very professional but [also] personal...me and the doctors are partners in trying to reduce or take care of my health.” (P49)

Agency in Self-Management

Personalised CSP recognised that for patients to live well with their condition, they had to develop greater agency in diabetic self-management.

Care-ownership: From provider to patient

Participants reported working harder to identify personalised health goals compared to usual consultations:

“Actually, it came more from me, but the doctor did advise...I did set quite a realistic figure [numerical target], so she [was] actually just try[-ing] to give me some ideas rather than giving me or setting the target for me” (P33)

Health and sometimes aspirational life goals set by patients rather than by providers resulted in ownership of health outcomes:
“But now is totally different...I saw my result and if I really want to achieve [this target], I must follow what I promise... I'm the one who set this...I'm the one [laugh] not, no, no longer the doctor” (P21)

Care-goals: From abstract to concrete

Staking a personal claim in outcomes resulted in goals that were more realistic, concrete, and achievable: “…because the goals are set by ourselves...you got to be realistic ah...” (P29)

Participants shared how initial goals written into CPL often became more concrete through the CSP conversations:

“I...hopefully will bring down the weight...we were looking at it and then [the CSP practitioner said] how much of it are you going to reduce? I say I put down there already .... 60 plus, So ... 69 or sixty, so, [the CSP practitioner] wants me to put a range. Ya, I put it down, so that is the goal that I’m going lah, 65-69[kg] around there” (P16)

Inking in the personalised goal was an act of ownership and agency that both excited and challenged participants:

“…when you put something in black and white, you really want to make it happen right? It’s not something that you want to be flaky... So, [the doctor] say can [you do what you have written] or not? I say I think can ah so he says ok change [laugh]...there's some form of challenge” (P26)

Agency takes time

The shift in disposition of patient from receiver of advice to being an explorer of creative solutions takes time and some effort.
“[When asked to] share your own ideas...hmm I usually don’t because I do not have ideas of my own, so the answer is I got a lesser chance [of generating ideas]. I will have to wait for the doctor to give me the information” (P44)

This patient shares how new plans occurred to him the weekend after the CSP conversation:

“Umm, I, after a couple of days after the consultation, over the weekend, I suddenly said like “hey you know I got to plan something else” it started me thinking that I got to do something...” (P44)

With increased rapport with their providers, patients could imagine how they could better generate ideas and plans for themselves:

“I [don’t] know the doctor yet. If I know him or her better maybe I will [suggest ideas], maybe the bond will be there but at this moment I don’t think I will.” (P37)

So, while challenges remained, some patients could envision themselves increasing in agency and capacity for self-care as the provider-patient bond strengthened over time.

Discussion (1,038 words)

Summary

In this study, participants unanimously responded positively to personalised CSPs. Taken together, the main themes and subthemes identified demonstrate how persons living with diabetes experience the different elements within PACE-D, ranging from the experience of preparing for the consultation with the CPL to creating goals for themselves. Although language proficiency affected engagement, for many the CPL prompted sometimes uncomfortable reflection on missed outcome targets. Others found in the programme coordinator an encouraging ally who provided empathy and advocacy in diabetes care beyond the call of duty. Patients found and appreciated that the CSP practitioners were
notable for their unrushed attention, and for treating patients as partners-in-care. The combination of factors encouraged patients to engage more actively in the CSP conversation, to find voice for what personally mattered most in living well with diabetes, and over time to increase in agency in diabetes self-management.

**Strengths and Limitations**

The qualitative interview methodology allowed us to have an in-depth understanding of the patient perspective of PACE-D (Figure 1). We interviewed 52 participants, a substantial number for research of this nature. As part of our purposive sampling strategy, we managed to achieve representation of the main ethnic groups (Chinese, Malay, Indian) in Singapore. Most of our participants had relatively good diabetes control (median HbA1C 7.4%) and a higher rate of secondary and post-secondary education (92.4%), compared to the national rate (74.5%).(26) In addition, data quality might have been affected because we needed to conduct the interviews using a mix of modalities (in-person, phone, live-streamed) amid pandemic safety measures, and one of the two interviewers had prior interactions with participants.

**Comparison with existing literature**

Similar to the experience of patients in the UK(4, 9), patients in our study felt that personalised CSP strengthened their sense of agency and allowed them to have a stake in determining their own goals. This sense of agency however sometimes took time to develop, and often depended on the language proficiency of patients.(27-29) Patients appreciated that the CPL prepared them for CSP conversation (9, 30) and that the non-administrative empathetic and motivational role of the programme coordinator cohered with the literature on the positive contribution of health coaches as facilitators and advocates for persons living with diabetes in primary care settings (31). Participants also noted that personalised CSP conversations contrasted with usual consultations in that time was intentionally
set aside, providers listened better, and these fostered better patient-provider relationships. These results align with research that identify the importance of “listening and learning” during consultations to build a “caring relationship” over time.\(^\text{(32)}\) Two recent reviews also highlight how having a good patient-provider relationship improves self-management and health outcomes.\(^\text{(33, 34)}\)

**Implications for research and/or practice**

Our study points to the need for future research in several key areas.

*Who benefits most from personalised CSP?*

We observed that patients with stronger language proficiency were generally more engaged with the CSP process. Our study participants (median HBA1c 7.4%) generally had well controlled diabetes reflective of the Singapore polyclinic population (80% have HBA1c < 8% - internal data).

As an intervention that requires careful resource planning, it matters that we ask which subgroups of persons living with diabetes would benefit most from the personalised CSP process. We did not purposively sample patients based on diabetes control (e.g., HBA1c level) in this study. Subsequent interventions stratifying individuals with different levels of diabetes control on their experience of personalised CSP will be instructive. In addition, providing for individuals with weaker language proficiency and possibly weaker health literacy could guide future resource allocation in the time and manpower-constrained polyclinic context.

*How may we amplify agency in self-management?*

While trained practitioners played had the explicit role as partners in the CSP conversation, the research team observed how the programme coordinator’s role mattered. In addition to administrative issues, they provided resources, nudged agency, and offered a listening ear to persons living with diabetes. We are intrigued by how a dedicated and motivated *albeit* non-medically trained
team member (e.g., health peers, health concierges) could open up pathways in the optimal care of persons living with diabetes and other LTC.

How may time be best used?

Time is a scarce resource in healthcare. For personalised CSP, it helps to think about time “during” and “in between” the CSP conversation.

“During”

Time is needed for the CSP process. In contrast to rushed “usual consultations”, participants cited how they were thankful for the time set-aside for constructive discussions. They felt listened to, found a voice for their doubts and concerns, and partnered with providers in the care of their LTC.

Time is needed to develop agency. Our data shows that repeated annual CSP conversations facilitate self-management. Insights gained during the consultation help patients transition from mere contemplation to decisive action.

“In Between”

While preparation time (Figure 1) is set aside in the design of CSP process, we found receiving the CPL can be a trigger for patients. Only a small minority of patients give the letter a brief glance. Most patients derive substantial insights from it. A significant number harness the CPL to better understand the nuances of their health. Others proactively contemplate its contents, even discussing their reflections with the programme coordinator before CSP conversations. Whether immediate or deferred, the letter has a marked influence on most patients’ approach to their health journey.

Beyond Diabetes, Beyond Polyclinics
Our study focused on the care for persons living with diabetes, an archetypal LTC. Many of the factors required for self-management would be echoed in the management of other LTC, e.g., hypertension. Researchers see a role for CSP for the care of LTC beyond diabetes.

In addition, personalised CSP has the potential to be extended from the public polyclinic setting to the private general practice/ family practice setting which provides an estimated 80% of primary care in Singapore.(35)

Non-English Speakers

With just three participants who were interviewed in non-English languages in this study, we are unable to make conclusions about how non-English speakers experience personalised CSPs. There may be value in specifically sampling Asian language speakers for their experience of CSPs. The potential of personalised CSPs to strengthen self-management may be an important strategy to contain rising numbers of patients with diabetes and other LTC in Singapore, and other countries in the region.

Additional information (124 words)

Funding

This study was funded by the Centre for Chronic Disease Prevention and Management (CDPM) and Singapore Population Health Improvement Centre (SPHERIC-023). The PACE-D main evaluation study is funded by the Ministry of Health (MOH), Singapore.

Ethical approval

Ethical approval was obtained from the National Healthcare Group DSRB (2018/01288-AMD0015).
Acknowledgement

We would like to thank participants, staff and leadership at NUP especially at Pioneer and Jurong polyclinics for their support with this study. We thank Ms Ang Shu Lin for conducting the Mandarin interviews, Professor Vikki Entwistle and Dr Sharon McCann for their generous support and guidance, and Ms Lindsay Oliver and Dr Nick Lewis-Barned from the YOCP for their support in training our CSP practitioners.

Competing interests

The authors declare no competing interests.

References


1. PREPARATION
Patients receive CPL with most updated laboratory results and reflection prompts.

5. REVIEW
Patients attend interim consultations to review their progress made with stated goals and action plans.

2. CONVERSATION
Prepared patients consult with CSP providers. Sharing of lived experiences and clinical expertise facilitate joint goal setting and action planning.

4. ACTIONS
Patients work on goals, action plans and self-management using formal and informal sources. The PACE-D Coordinator may coordinate these.

3. RECORDING
Patients write the goals and action plans on their CPL. Providers document the discussion on the electronic medical record (EMR).

Figure 1: The Process of Personalised CSP in PACE-D(6)
Table 1. Demographic and clinical information (N = 52)

<table>
<thead>
<tr>
<th>Demographic and Clinical Information</th>
<th>N (%), Median (IQR)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age (years) (Median, IQR)</strong></td>
<td>58 (12.3)</td>
</tr>
<tr>
<td><strong>Gender (n, %)</strong></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>30 (57.7)</td>
</tr>
<tr>
<td>Female</td>
<td>22 (42.3)</td>
</tr>
<tr>
<td><strong>Ethnicity (n, %)</strong></td>
<td></td>
</tr>
<tr>
<td>Chinese</td>
<td>24 (46.2)</td>
</tr>
<tr>
<td>Indian</td>
<td>14 (26.9)</td>
</tr>
<tr>
<td>Malay</td>
<td>8 (15.4)</td>
</tr>
<tr>
<td>Others</td>
<td>6 (11.5)</td>
</tr>
<tr>
<td><strong>Educational level (n, %)</strong></td>
<td></td>
</tr>
<tr>
<td>No formal education</td>
<td>1 (1.9)</td>
</tr>
<tr>
<td>Primary</td>
<td>3 (5.8)</td>
</tr>
<tr>
<td>Secondary/Institute of Technical Education</td>
<td>20 (38.5)</td>
</tr>
<tr>
<td>GCE “A” level/International Baccalaureate/Polytechnic Diploma</td>
<td>16 (30.8)</td>
</tr>
<tr>
<td>University &amp; above</td>
<td>12 (23.1)</td>
</tr>
<tr>
<td><strong>Marital status (n, %)</strong></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>3 (5.8)</td>
</tr>
<tr>
<td>Married</td>
<td>41 (78.9)</td>
</tr>
<tr>
<td>Divorced</td>
<td>3 (5.8)</td>
</tr>
<tr>
<td>Widowed</td>
<td>5 (9.6)</td>
</tr>
<tr>
<td><strong>Housing type (n, %)</strong></td>
<td></td>
</tr>
<tr>
<td>HDB 1-2 Room Flat</td>
<td>1 (1.9)</td>
</tr>
<tr>
<td>HDB 3-Room Flat</td>
<td>3 (5.8)</td>
</tr>
<tr>
<td>HDB 4-Room Flat</td>
<td>13 (25.0)</td>
</tr>
<tr>
<td>HDB 5-Room/Executive Flat</td>
<td>34 (65.4)</td>
</tr>
<tr>
<td>Condominium/Landed Property</td>
<td>1 (1.9)</td>
</tr>
<tr>
<td><strong>Polyclinic</strong></td>
<td></td>
</tr>
<tr>
<td>Pioneer</td>
<td>36 (69.2)</td>
</tr>
<tr>
<td>Jurong</td>
<td>16 (30.5)</td>
</tr>
<tr>
<td><strong>Number of Care-and-Support-Planning conversations (CSPs)</strong></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>26 (50.0)</td>
</tr>
<tr>
<td>2</td>
<td>22 (42.3)</td>
</tr>
<tr>
<td>3</td>
<td>4 (7.7)</td>
</tr>
<tr>
<td><strong>Years living with DM (Median, IQR)</strong></td>
<td>9 (7)</td>
</tr>
<tr>
<td><strong>Hba1c (Median, IQR) most recent reading before interview</strong></td>
<td>7.4 (1.6)</td>
</tr>
<tr>
<td>&lt; 7% (n, %)</td>
<td>19 (36.5)</td>
</tr>
<tr>
<td>≥ 7% and above (n, %)</td>
<td>33 (63.5)</td>
</tr>
<tr>
<td><strong>Diabetes management (n, %)</strong></td>
<td></td>
</tr>
<tr>
<td>Insulin-requiring</td>
<td>10 (19.2)</td>
</tr>
<tr>
<td>Non-insulin requiring</td>
<td>42 (80.8)</td>
</tr>
<tr>
<td><strong>Comorbidities</strong></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>1 (1.9)</td>
</tr>
<tr>
<td>Hypertension</td>
<td>3 (5.8)</td>
</tr>
<tr>
<td>Hyperlipidaemia</td>
<td>12 (23.1)</td>
</tr>
<tr>
<td>Hypertension and hyperlipidaemia</td>
<td>36 (69.2)</td>
</tr>
<tr>
<td>Theme</td>
<td>Sub-themes</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
</tr>
<tr>
<td>The Importance of the Care-Planning-Letter (CPL)</td>
<td>A reflective prompt</td>
</tr>
<tr>
<td></td>
<td>Preparation for the personalised CSP conversation</td>
</tr>
<tr>
<td></td>
<td>The challenge of language proficiency</td>
</tr>
<tr>
<td>The Role of the Program Coordinator</td>
<td>Ensured smooth running of programme</td>
</tr>
<tr>
<td></td>
<td>Program coordinator as coach</td>
</tr>
<tr>
<td></td>
<td>Coming alongside with empathy</td>
</tr>
<tr>
<td>The Value of the Personalised Care-and-Support-Planning (CSP)</td>
<td>Healthcare provider as listener</td>
</tr>
<tr>
<td>Conversation</td>
<td>Time for relational communication</td>
</tr>
<tr>
<td></td>
<td>Practitioners and patients as partners</td>
</tr>
<tr>
<td>Agency in Self-Management</td>
<td>Care-ownership: From provider to patient</td>
</tr>
<tr>
<td></td>
<td>Care-goals: From abstract to concrete</td>
</tr>
<tr>
<td></td>
<td>Agency takes time</td>
</tr>
</tbody>
</table>