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The influence of daily routines on engaging in diabetes self-management

Heather Fritz

Division of Occupational Science, University of North Carolina at Chapel Hill, Chapel Hill, NC, USA

Abstract

Objective—In contrast to previous research concerning the importance of routines in occupational engagement, most of which have largely focused on the routines of children and families, in this study a qualitative methodology was used to understand how routines function in a specific occupation: diabetes self-management (DSM).

Methods—Ten low-income women participated in a multiple-methods study that involved completing a time-geographic diary (TGD) and participating in a TGD interview.

Results—Findings reveal that pre-existing routines must be changed so that they may better support engagement in DSM, and that such changes are tied to underlying habits and life situations. The experiences of study participants also showed that the distribution of daily occupations through time and across social spheres can be both supportive of and problematic for engaging in DSM. In addition, the structure and sequence of competing daily occupations influences the available time and opportunities for people to further develop their skills and become more adept self-managers.

Conclusions—The implications of these findings for occupational science and therapy are discussed.

Keywords

behavior; diabetes; diaries; habits; occupation; time

Introduction

Recent scholarship in occupational therapy and occupational science (1–3) demonstrates a growing interest in the effects of diabetes and in facilitating individuals' abilities to participate in diabetes self-management (DSM). It is also plausible that DSM can be characterized as a form of occupational engagement, especially as DSM is named in the lexicon of culture, requires specific capacities, holds personal and social meanings, and performance in DSM is compared with normative standards (4,5). Despite the growing

Correspondence: Heather Fritz, PhD OTR/L, Institute of Gerontology, Wayne State University, 87 E. Ferry St. 233 Knapp Building, Detroit, MI, 48202, USA. Heather.fritz@wayne.edu.

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awareness of diabetes and of the difficulties people have with engaging in DSM, few researchers have yet to explore DSM as an occupation – even though doing so helps us more fully understand how people engage in DSM and how contexts influence this process. In this article, selected findings are presented concerning the influence of daily routines on DSM from a multiple case, multiple methods study of how individuals with type II diabetes integrate DSM into daily life and conditions that influence this process.

Diabetes is a widespread metabolic disorder that affects more than 366 million people worldwide, an estimated 90–95% of which are type II diabetes (T2DM) (6). The sequelae of type II diabetes includes micro- and macro-vascular complications that significantly increase the risk of conditions such as heart disease, stroke, high blood pressure, blindness, and kidney disease (7). For people with type II diabetes, the potential for complications is high. This is especially true for certain higher risk groups. For example, individuals of minority status, those having lower incomes, and females tend to have higher rates of suboptimal diabetes outcomes and experience higher rates of diabetes-related complications (7,8). Fortunately, evidence demonstrates that many risk factors associated with the disease can be reduced or eliminated through a combination of medical management and lifestyle changes that is commonly referred to as diabetes self-management or DSM (9). More specifically, individuals with diabetes are expected to eat a healthy diet, engage in regular physical activity, take their medications and test their blood glucose levels as prescribed, solve problems as they arise, monitor their condition, and managing the psycho-social and emotional impact their condition has on their lives.

Historically, researchers have attempted to facilitate optimum DSM through programs that focused largely on didactic education (10). However, the new era of DSM interventions has incorporated additional skills and strategies (e.g. behavior change goals, treatment self-efficacy, and barrier management/resolution strategies) (11). Unfortunately, evidence demonstrates that even the most sophisticated programs have only limited success (12). Many people continue to struggle with performing DSM despite having received such intervention supports (13).

Part of the difficulty of engaging in DSM is because doing so requires people not only to change established habits but also to develop additional knowledge and skills (9,14). Routines play an important role in how individuals advance their skills and organize supporting habits (15) and are therefore an important factor in becoming more adept in DSM. Definitions of routine continue to vary (16); however, the concept can be loosely defined as a set of sequenced patterns of action in an occupation or reoccurring successions of occupations during the day (17).

Scholars in occupational science have examined the role of routines in human occupational engagement, although prior studies have focused mostly on the role of routines within families, parental/caregiving relationships, and retirement contexts. These studies suggest that routines change with major life transitions such as retirement (18), and that they provide temporal organization and structure (19). In addition, routines are generally depicted as positive in the sense that they promote family resilience and the development of family identity (20), and provide a sense of control and continuity in times of stress (21). Scholars

have also noted that the sequencing of occupations within daily routines can have both positive and negative effects on health (22–24).

Less work has been done on how the construction of daily routines affects the actions people take to manage their health or how this relationship might change over time. One exception is the recent study by Sanders and Van Oss (2012) (25), who examined how the consistency of daily routines facilitated participants' ability to take medications as prescribed. That study, however, focused only on medication management; the influence of routines may be different for more complex endeavors (e.g. making dietary changes or establishing exercise regimens). Considering the significant health risks people with diabetes face, and the role of DSM in mediating those risks, it is important to understand how the structuring of daily life influences engagement in DSM, especially in populations that have tended to have poorer DSM outcomes. This paper addresses this gap by using insights drawn from an analysis of the daily routines of 10 low-income women who are engaging in DSM.

Material and methods

This research report presents selected findings from a larger study that studied the influence of daily routines on the process by which low-income women with T2DM integrated DSM into daily life. Data in the larger study were collected using the following methods: the Diabetes Care Profile¹ (26), semi-structured interviews, participant-generated photography and a photo-elicitation interview, and time-geographic diaries (TGDs) (27) along with a follow-up TGD interview. The TGDs and TGD interviews were used to elicit the influence of routines on the integration process. The focus of this research report is the results from the analysis of the TGD and TGD interviews.

Sample and recruitment

Approval to conduct the study was obtained from the university's institutional review board before beginning recruitment. A purposive sampling strategy was used to recruit low-income women from an urban location in central North Carolina. Inclusion criteria consisted of (a) self-reporting of a diagnosis of type II diabetes; (b) age between 40 and 64 years; (c) a household income at or below 200% of the federal poverty guidelines; and (d) ability to read and write English at the third-grade level. Recruitment occurred at a nonprofit primary care clinic. The clinic site was chosen because of the primary investigator's familiarity with the clinic. The author had been assisting with the DSM education classes offered at the clinic as part of another research study. The DSM classes served low-income, mostly minority women, most of whom were diagnosed with type II diabetes, making it feasible to recruit the desired number of participants with respect to the study's aim and the inclusion/exclusion criteria. The clinic's medical director granted permission to recruit from the site and allotted time at the end of the DSM classes for the author to briefly describe the study, distribute recruitment flyers, and collect the contact information of interested potential participants. People who voluntarily provided this information were then contacted by phone to reiterate the purpose of the study and answer any questions. If a potential participant was still

¹The Diabetes Care Profile (DCP; Michigan Diabetes Research and Training Center, <http://www.mcd.umich.edu>) is a self-administered - questionnaire used in DSM research to assess the psychological and social factors that affect diabetes care.

interested in the study after this phone call, an appointment was made to meet, review the study consent forms, answer any additional questions potential participants had, and grant informed consent. All participants were given a copy of their consent forms. During the meeting it was reiterated that participation was voluntary, and that they could withdraw from the study at any time. Participants were also guaranteed confidentiality and anonymity in data collection, analysis, and presentation of the findings. To protect the privacy of participants, study-related activities were not discussed with participants while they were attending the DSM classes. In total, 10 women were enrolled in the study and completed all data-collection activities. Table I presents demographic data for the sample including participant pseudonym, age, ethnicity, years of having to engage in DSM, marital status, family size, level of formal education, and employment status.

Data collection for the TGDs

TGDs provide a unique method for eliciting information on complex daily routines (28). They have also been shown to be effective at stimulating participant dialogue concerning daily life patterns (29). Therefore, TGDs were utilized to construct a clear portrait of participants' daily routines (Table II). Collection of the TGD data was conducted after participants had first completed: a Diabetes Care Profile, a semi-structured interview, participant-generated photography, and a photo-elicitation interview. Data from the additional methods are presented elsewhere. Participants were asked to complete a TGD for two days of their choosing (one weekend and one weekday) as suggested by Pentland, Lawton, Harvey, and McColl (1999) (30). Each also participated in a semi-structured TGD interview. The TGD packet included (a) the leave-behind TGD formatted in 15-minute intervals; (b) an example of how to complete the diary; (c) the author's contact information if participants needed further guidance; and (d) a pre-paid mailer for returning the TGD. The author met with each participant to discuss how to complete the TGD and illustrate its use. When participants felt confident that they could complete the TGD independently, it was left with them.

Participants returned the TGDs using pre-paid mailers. After receiving a diary, the data were transferred to a spreadsheet for preliminary analysis prior to meeting with the participant for the TGD interview. This preliminary information informed the TGD interviews by suggesting avenues of further inquiry (e.g. the meaning of recurring patterns or co-occurring occupations). During the interviews, participants were asked to discuss their current routines and how they had changed over time. Participants were also asked to elaborate on aspects of their time use including (a) why certain activities co-occurred; (b) how and why their DSM activities were performed in different places with different social contacts; and (c) how they perceived the function of their routines in negotiating competing daily demands and engaging in DSM. Participants were enrolled sequentially allowing for concurrent data collection and analysis. Interviews were digitally recorded with participants' permission and transcribed for further analysis. Each participant received a \$50 stipend after completing the TGD and interview.

Data analysis

The TGDs were analyzed at several levels to yield different perspectives on how the sequence of daily activities affects engaging in DSM. These perspectives included (1) types of primary and secondary activities that each participant engaged in during a typical day; (2) total time use of activities; (3) types and frequencies of co-occurring activities; and (4) routine structures. Cases were analyzed individually and as a group, according to the same four parameters. Line graphs were also generated depicting the distribution of the participants' DSM activities through space and social spheres (27). The quantitative analysis of the TGDs was then merged with the interview transcripts (31) that themselves had been analyzed through multiple rounds (line-by-line, focused, and theoretical) of coding (31).

Initial memos and diagrams of hypothesized linkages were either supported or rejected as data from additional cases were added. Themes that emerged from early data analysis were theoretically sampled for through being incorporated into and followed up on in subsequent interviews (31). This process was useful for ensuring that the findings were grounded in the experiences of the participants. Moreover, the addition of subsequent cases increased the depth of emerging themes. The iterative nature of intra-case and cross-case comparisons involved making constant comparisons across cases and data types. Constant comparisons allowed the researcher to explore alternative interpretations of the data. Peer debriefing was used with the author's research mentor (during biweekly meetings) to explore emerging interpretations of the data. Alternative interpretations were discussed with research mentors and further explored as new data were added. Interpretations that were more supported by the data were further developed (31). Field notes were kept to document any preconceived notions that could influence data analysis and interpretations. Such preconceived notions were shared with participants. Such sharing was a process that helped illuminate both the researcher's assumptions regarding the challenges of DSM and the research participants' assumptions regarding what they believed researchers were most interested in knowing about their DSM. Data analysis resulted in the lifting of three clear themes related to the influence of daily routines upon engagement in DSM.

Results

Although participants varied in terms of their routines, they shared some similar habits and life situations that influenced how they structured their daily lives. Participants' habits and particular situations were manifest in the construction of daily routines; in other words, routines reflected what participants had to do, wanted to do, where and with whom they did it, and how they negotiated those dynamics in the face of limited time and resources. Data analysis revealed three important ways that routines influenced participants' engagement in DSM: (1) it was necessary to change routines to support DSM, (2) the distribution of DSM across spatial and social networks posed resources and barriers, and (3) the structuring of time use within daily routines impacts the time available to develop DSM. The following sections introduce each of these aspects of routines and include excerpts (edited for clarity) to illustrate their influence on DSM.

Changing routines to support DSM

Routines established prior to the diabetes diagnosis continued to provide a functional structure for daily life but often were not supportive of the addition of DSM engagement. For example, previously established routines had a negative impact on DSM or exposed participants to circumstances that made it difficult to engage in DSM. In addition, the structuring of time within daily routines often left little room for developing DSM-related skills. Routine, therefore, needed to be reconfigured to be more supportive of DSM.

Becoming aware—Changing routines is complex and involves more than simply rearranging blocks of time. The change process began as participants become aware of aspects of their routines that were problematic for DSM. General problematic influences within routines were easier to identify such as “long work hours”, which left little time or energy for exercise or preparing healthy meals. More specific problematic influences, however, were more difficult to identify, such as recurrent exposure to social situations or places that influenced behavior in ways contrary to DSM goals. These are especially difficult to identify when these recurrent exposures simultaneously serve a functional purpose in the scheme of larger daily life (i.e. provided social support).

Changing routines requires not only identifying problematic aspects of daily life patterns, but also changing the underlying habits and situations that shape those patterns to begin with. When approaching routine modification as simply an exercise of willpower, success is often short lived. Cindy's case provided an example of how changing routines must include modifying supporting habits and situations that contributed to its construction in order for such changes to endure:

I said well, I'm going to change my routine, I'm going to get up at 7:30 a.m., exercise for 30 minutes and then take care of some things before work. I thought it would be that easy. Of course I didn't get very far because let's face it, first of all I'm a night owl, I haven't got up at 7:30 in a long time. ... Second, I wasn't even working out every day, anytime of day, to begin with. On top of all that, I kept finding other things, once I did get up, that I had to deal with instead.

Cindy was indeed a night owl: her TGD revealed that she went to bed near 2 a.m. and awakened close to 9 a.m. This pattern fitted in with her work schedule because the child she cared for in her home did not arrive until 10 a.m. When asked why she did not work out later in the day, however, Cindy responded that she could not rearrange the activities she engaged in at that time or that she was not willing to do so because of the value she placed on their spot in the sequence of her daily life. Cindy's example illustrates not only that routines must be changed to support DSM, but also that to be successful in the long term these changes must be accompanied by changes in habits and situations. As Cindy later stated: “Yeah, you think you can just up and change it [routine], but it's never that easy... you have to change your perspective on things too, along with what you do, if you're going to make room for it [DSM].”

Change starts small—Because of the difficulty involved, routines are first modified to accommodate engagement in simple DSM components (i.e. medication administration).

This chronology is adopted because simple activities involved fewer tools or specialized skills, and required little time. As Alyssa stated: “The meds are no problem, I got that down first. I mean you pop a pill or whatever. I can do that anywhere, anytime. It’s the other stuff like the diet and exercise that is really difficult to fit in.” More complex components, such as engaging in exercise or making dietary changes, often required much more time, preparation, or specialized tools and knowledge. Therefore, adding such components requires people to make more substantial changes to their routines.

Distribution of DSM

Routines structure the sequence of daily occupations including where they occur and with whom they are experienced. Individuals often coordinate their routines with those of others for both necessity and pleasure. The social and geographical distribution of daily occupations can facilitate participation in DSM by extending available resources and support. Conversely, certain aspects of these distributions perpetuate individuals' engagement in activities that conflict with DSM goals.

Social and spatial coordination of routines—Participants often lacked sufficient resources such as time (due to long work hours or heavy caregiving responsibilities), finances, or transportation to fully meet their DSM needs. Coordinating their routines with those of others provides a way to access additional resources. Socially coordinating routines becomes easier when everyone's routines remain stable. Conversely, unexpected disruptions in daily routines can cause a breakdown in this orchestration resulting in individuals being unable to obtain the necessary resources and support for engaging in DSM.

For example, Felinda did not own a vehicle, and also cared for her elderly father and her son's two-year-old daughter. Felinda had to coordinate her routine with those of her son and sister to secure both time and transportation in order to pickup prescriptions or attend doctor's appointments at locations beyond the bus line. Felinda described her need to constantly coordinate her routine with others to secure these supports:

Well I mean it's enough for me to just keep track of me, but I have to always be knowing what he's doing [son] and where she's [sister] at because we have to coordinate everything so that I can get done what I need to get done. I mean she's mine [granddaughter]. I keep her in my house, but with the other two [grandchildren] he just has to take her sometimes so that I can get stuff done because I only have a small window of time to do those things I need to do.

Although socially coordinating routines facilitated DSM, these same contacts could also be problematic. The same person that assisted with purchasing medication and accompanying participants to medical appointments could also be the same person with whom they engaged in activities that were in conflict with DSM goals. For example, Aleisha noted that she relied heavily on her sister to accompany her to doctor's appointments and also for financial support with purchasing her DSM medications. Although Aleisha valued spending time with her sister, she also saw her constant exposure to her as one of her biggest barriers to adhering to her dietary regimen:

I do better on my own. I would probably do OK if I just ate home alone. Once I'm out with her [almost every night], one, I don't want to pay all that money and just eat a salad, but two, even if I did, they don't even have just a simple salad ... but I don't want to eat dinner alone either, so there I go.

Likewise, the geographical distribution of daily routines also impacted DSM. Places become integrated into routines when they serve a function. For hard-working women with little time and few resources, fast-food restaurants become important places within daily routines. Cheap, convenient, fast-food meals serve an important function, saving both time and scarce energy. For example, both Yolanda and Glenda visited specific fast-food restaurants every day on their way to or from work because it was a convenient way to obtain a time-effective, low-cost meal. Although participants saw fast-food meals as functional for maintaining their routines (getting to work on time and preventing hypoglycemia), they also acknowledged that the cumulative effects of fast-food consumption were detrimental to their DSM goals. When asked why she continued with this routine despite its consequences Glenda stated: "I don't know, I guess it's because it's just so easy you know. I mean it's right there on the corner at the intersection ... before I make the right turn to the office". Places integrated into routines may negatively affect DSM; however, they remain solidified in the daily flow because of their function within larger daily life management.

Time needed to develop DSM

Participants had no a priori knowledge of how to engage in DSM. Instead, as they navigated their DSM trajectories they had to develop the necessary skills and abilities. Having time, especially at the beginning of their DSM trajectories, was essential to becoming more adept at DSM. Even more important was having the right type of time. The TGDs revealed micro routines (smaller sequences of activity-time configurations) nested within larger daily routines that had particular implications for engaging in DSM and developing self-management abilities.

Closed time—Closed time, which each of the participants maintained in their daily routines to some degree, was characterized by highly predictable sequences of consistently performed activities or occupations. Participants used phrases such as "spoken for", "non-negotiable", and "mandatory" to describe their closed-time activities. The most common activities associated with closed time (a) comprised the morning routine (waking up, using the bathroom, and getting dressed); (b) were related to paid employment (working hours, travel to and from work); and (c) involved child and elder care. Not only were these activities seen as essential to maintaining daily life, but the relative sequencing of activities within closed-time intervals also remained constant. Therefore, components of DSM that were completed during closed-time intervals were engaged in most consistently. For example, activities that occurred during the first two hours after waking were the most consistently sequenced. The second and third most-consistently reported sequences of activities occurred, respectively, during working hours and the two hours before going to sleep. The most common DSM components that participants reported performing during closed-time intervals included medication management, including blood glucose monitoring; exercise; and a healthy breakfast.

Open time—Open time referred to relatively unstructured blocks of time in participants' daily and weekly routines. Although participants generally made some tentative plans for open-time intervals, these intervals were much more flexible and accommodating to spontaneous or unforeseen events. Participants most often used open time for preparatory activities associated with their DSM, such as: (a) couponing and looking at sales flyers; (b) recipe searching; (c) practicing new dishes; (e) trying novel exercise classes; and (d) taking personal, quality time to “de-stress”. Open time could be predictable but was still open because of possible variations in the timing and sequence of these activities, their locations, and who else was present when they occurred.

Participants' experiences indicated that having more open time was especially important at the beginning of their DSM trajectory. This was because they felt that they needed more unimpeded, flexible time to think about, plan and prepare for, and experiment with different ways of engaging in DSM components. As Aleisha said:

Really I think it just takes time, and I mean sometimes it can take a lot of time, sure the money is important, in some ways more, and in some ways less, but I guess if you don't have the time, who cares how many good ideas you have, right?

Participants described a general process of first engaging in new DSM activities during open-time intervals. These novel experiences tended to be acted upon in an open-time interval until participants gained sufficient experiences with them. Repeated experiences led to the participants slowly changing their habits, situations, and subsequently their routines to be more supportive of their DSM efforts. As routines changed, novel activities became integrated into closed intervals and were subsequently performed more consistently.

Discussion

The purpose of this study was to explore and describe how the structuring of daily routines influences the integration of DSM into daily life. The study showed that integrating DSM into daily life involves changing behaviors and learning new skills, both of which require modification of established routines. A key finding is that modification of existing routines is often challenging because routines become habits and are therefore imperceptible to those needing to change them. This is particularly interesting in the light of scholarship which suggests that stable routines are desirable because they facilitate consistent participation in daily occupations and allow people to meet the desires and demands of daily life (17,19). On the positive side, over time, aspects of routines become habitual and function below reflective awareness (32). On the negative side, the habitual nature of daily routines makes it difficult for one to reflect on them in order to identify what needs to be changed (33).

The findings raise questions regarding dominant approaches to facilitating DSM. Contemporary programs often focus on teaching cognitive strategies (problem-solving, goal setting) as a means of improving DSM (34). Those approaches share a belief that human thought and action is primarily goal directed, reflective, and purposeful. In other words, there is an underlying assumption in current interventions that humans are predominantly reflective beings, able to “see” relevant problems in their performance and environment, and adjust accordingly. This perspective has come under critique in the psychology and health-

promotion literature (35,36). More specifically, psychological research suggests that human thought and action is largely under the influence of habits that operate below conscious awareness in conjunction with particular contexts (37). Subsequently, humans tend to overestimate their abilities and performance while failing to identify relevant problems (38). Such evidence and the findings of this study imply that a different approach may be needed to assist people in making changes in their everyday activity patterns.

An additional insight from this study's findings is the time needed for DSM. The present study's findings suggest that the time requirements for DSM may be even higher than previously thought. This is especially true during the initial months and years of the DSM trajectory as people require additional time to think about, plan, and prepare for engagement. This finding aligns with existing occupational therapy research which demonstrated that when developing new habits post stroke, participants needed much more time than usual to plan, prepare, and organize their engagement in daily occupations (39). To date, research has underestimated the time demands of DSM by failing to account for the necessary preparatory time, especially as individuals engage in new and often complex activities. This has implications for interventions. Previously, the temporal demands of DSM have been explored by estimating the total time needed to complete all recommended DSM components (eating a healthy diet, checking blood glucose levels, taking medications and insulin, exercising, monitoring one's condition, and managing the psychological impact of the disease) (40). Results from those studies demonstrate that individuals would need at least two hours each day for basic DSM. Nonetheless, such assessments of time do not include the time that individuals spend planning, thinking about, and preparing for engagement. Interventions should be more realistic about the daily time required to implement DSM and associated changes.

Becoming more adept at DSM is not simply about having sufficient time, but having the right type of time, at the right time. Participants needed open and flexible time, amenable to practice and experimentation. Regardless of how many years participants had been managing their diabetes, they consistently reported that they needed more unimpeded time when trying something new or complicated. With the small sample size, it is impossible to determine how much open time individuals may generally need to master specific activities. Some insight may be provided by research on habit change which suggests that changing one simple habit can occur in as little as 18 days or as many as 254 days (41). It is possible that diabetes self-managers may be able to develop new habits more quickly if they have ready access to sufficient open time. However, the reality of many low-income women in the USA is that their life situations often include working at low-paying jobs (and having multiple jobs) (42). Working more hours and undertaking caregiving responsibilities leaves little open time to address their own self-care needs. Within the study sample, reporting better diabetes management was not simply associated with more years of DSM experience. Rather, the women who reported better performance and less DSM burden were those with more stable, predictable, and "balanced" daily life patterns. This suggests that certain life situations may seriously impede or support DSM efforts.

Actively discussing daily routines is a neglected aspect of DSM care, and that is an aspect where occupational scientists have much to offer. This study indicates that ideas prevalent in

occupational science, such as “lifestyle balance” (43)”, could be usefully applied to the problem of DSM. Although much of the focus of lifestyle balance has been applied to understanding perceived stress, the concept may be useful for thinking about how daily routines provide or limit opportunities for individuals to further develop health management skills. Moreover, clinicians could use their understanding of routines to facilitate reflection on daily life patterns and their modification to support health management. For example, occupational therapy researchers have developed a resource, based on time geographic diaries, so that clinicians can help those with mental illness to identify goals and make strategic changes to habits and daily routines (44). In addition, understanding the different functions of open versus closed time could assist occupational therapists in advising clients on when they might best schedule certain activities in order to facilitate their development into habits. Such dialogue will be essential as clients with diabetes face making significant changes to their daily routines to support knowledge acquisition, skill development, and, optimally, the development of more health-promoting habits.

The following limitations of the study are acknowledged. The small sample size, drawn from a specific socio-cultural context, does not necessarily reflect the perspectives or experiences of people in other settings. In addition, the Grounded Theory process is interactive and the products of such a process represent a co-construction of both research participants' and researcher's interpretation of these experiences. The transactional perspective influences the author's worldview of humans as integrated in a functional relationship with their worlds. This influence of this perspective on the interpretation of the data is acknowledged. Despite these limitations, the grounded theory method is an appropriate method to explore social processes such as DSM and capable of producing new insights into conditions that influence individuals' engagement in DSM. However, further investigation of the function of routines in specified occupations is warranted in order to more fully understand how the structuring of daily rhythms influences participating in particular occupations such as DSM.

Conclusion

The findings indicate that daily routines, although functional for overall life management, can have both positive and negative consequences for engaging in DSM. Modifying routines involves addressing the habits and situations that drive the construction of routines to begin with. Although clients are often encouraged to modify their routines in order to better engage in health management, routine modification is a complex process and clients often receive little guidance on how exactly to go about the process.

Occupational therapists are uniquely suited for assisting clients to modify established routines in order for them to be more supportive of DSM. Practitioners could assist clients in identifying and negotiating problematic aspects of their daily routines, especially in respect of spatial or social distributions that make it difficult for them to adhere to their DSM goals. Additionally, therapists could assist clients in constructing realistic action plans for integrating more complex DSM components such as dietary changes and exercise. Moreover, therapists could work with clients to construct a daily routine that meets their needs while also facilitating sufficient open time for individuals to further develop their

DSM skills. Further research is called for to explicate more clearly the process of routine modification to become more supportive of engagement in occupations such as DSM.

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Table 1

Demographic characteristics of the sample.

Participant	Glenda	Lydia	Felinda	Alyssa	Aleisha	Lori	Yolanda	Deidra	Diane	Cindy
Age	59	58	63	48	58	64	47	58	45	60
Ethnicity	White	White	Black	Black	Black	Black	Black	White	Black	Black
Years with diabetes	20	14	18	18	5	30	6	3	6	14
Marital status	Single	Married	Single	Married	Single	Married	Married	Single	Married	Single
Income in thousands	<\$5	\$30–39	\$15–19	\$30–39	\$20–29	\$20–29	\$20–29	\$20–29	\$20–29	\$15–19
Family size	1	3	5	5	2	2	2	7	2	2
Education	High school	High school	Some college	Some college	Some college	Some college	Some college	High school	Some college	High school
Employed	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes

Note:

* To protect anonymity all names used are pseudonyms.

Table II

The sample of the TGD used by participants in the study.

Time	Activity	Secondary activity	Location	Persons present	Forfeited activities	Miscellaneous
7:00–7:15 a.m.	Breakfast	Child care	Home	Child	Morning exercise	Felt rushed
7:15–7:30 a.m.	Dressing	Child care	Home	Child	Morning exercise	Spouse not home yet to help