

Influence of Perceived Control on Health Outcomes in Chronic Disease Patients

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ABSTRACT

This study aimed to explore the influence of perceived control on health outcomes among chronic disease patients. By understanding how perceived control affects psychological well-being, health-related behaviors, and social interactions, the research sought to provide insights into improving chronic disease management. A qualitative research design was employed, utilizing semi-structured interviews to gather in-depth data from 20 participants diagnosed with various chronic diseases, including diabetes, hypertension, and chronic obstructive pulmonary disease (COPD). Participants were selected through purposive sampling to ensure diverse representation. Data collection continued until theoretical saturation was achieved. The interviews were transcribed and analyzed using NVivo software, following a thematic analysis approach to identify key themes and patterns. The study identified three main themes: psychological impact, behavioral impact, and social impact of perceived control. Participants who reported higher perceived control experienced lower stress and anxiety, higher emotional resilience, and better self-efficacy. Health-related behaviors such as medication adherence and regular health monitoring were positively influenced by perceived control. Social support from family, friends, and healthcare providers also played a crucial role in enhancing perceived control. For instance, 75% of participants indicated that a strong support network improved their ability to manage their disease, and 65% noted better health outcomes due to effective communication with healthcare providers. The findings underscore the significant impact of perceived control on the health outcomes of chronic disease patients. Enhancing perceived control through health literacy, social support, and integrated care can lead to improved psychological well-being, healthier behaviors, and better health outcomes. Future research should focus on larger, more diverse samples and longitudinal studies to further explore these relationships. Practical implications include developing educational interventions and support systems to foster a greater sense of control among chronic disease patients.

Keywords: Perceived control, chronic disease, health outcomes, psychological well-being, health behaviors, social support.

1. Introduction

Perceived control, defined as an individual's belief in their ability to influence events and outcomes in their lives, has been extensively studied in the context of health psychology (Chung et al., 2020; Kondo et al., 2021; Strömberg et al., 2020; van de Wal et al., 2018). Research suggests that a higher sense of perceived control is associated with better health outcomes, improved psychological well-being, and healthier lifestyle behaviors (Infurna & Gerstorf, 2014; Infurna et al., 2011). The relationship between perceived control and health is particularly pertinent in chronic disease management, where patients must continually adjust their behaviors and coping strategies to manage their condition effectively.

Infurna and Gerstorf (2014) found that perceived control is related to better functional health and lower cardiometabolic risk, mediated by increased physical activity. This suggests that individuals who feel more in control are more likely to engage in health-promoting behaviors, which in turn lead to better health outcomes (Infurna & Gerstorf, 2014). Similarly, Salehi et al. (2014) demonstrated that perceived control and self-efficacy are crucial determinants of subjective well-being and lifestyle behaviors, particularly among young women. These findings underscore the importance of fostering a sense of control in patients to improve their health and well-being (Salehi et al., 2014).

Lachman (2006) highlighted that perceived control over aging-related declines plays a significant role in how older adults manage their health. As individuals age, maintaining a sense of control becomes increasingly challenging but also more critical for sustaining quality of life (Lachman, 2006). Robinson and Lachman (2017) further elaborated on this, suggesting that perceived control can mitigate the negative effects of aging and improve psychological outcomes. This is particularly relevant for chronic disease patients, who often experience a decline in health and functional abilities as they age (Robinson & Lachman, 2017).

The impact of perceived control extends beyond physical health to include mental health outcomes. Kondo et al. (2021) examined the relationship between perceived control, preventative health behaviors, and mental health among nursing students during the COVID-19 pandemic. They found that higher perceived control was associated with better mental health outcomes, demonstrating the protective role of perceived control in stressful situations (Kondo et al., 2021). This finding is echoed by Strömberg et al. (2020),

who found that perceived control is associated with fewer depressive symptoms and greater well-being in patients with heart failure and their spouses (Strömberg et al., 2020).

Perceived control also influences patients' interactions with healthcare systems and their engagement in health behaviors. Janssens et al. (2007) reported that offering integrated care for HIV/AIDS, diabetes, and hypertension within chronic disease clinics in Cambodia improved patients' perceived control and health outcomes. This integrated approach allowed patients to feel more in control of their health by providing comprehensive and coordinated care (Janssens et al., 2007). Similarly, Marciano, Camerini, and Schulz (2019) found that health literacy, which is closely linked to perceived control, plays a significant role in diabetes management. Patients with higher health literacy are better equipped to understand their condition, engage in self-care, and achieve better glycemic control (Marciano et al., 2019).

The role of perceived control in chronic disease management is further supported by the work of Infurna, Gerstorf, and Zarit (2011), who examined the dynamic links between perceived control and health over time. Their longitudinal study found that perceived control has differential effects in midlife and old age, with stronger effects observed in older adults. This suggests that interventions aimed at enhancing perceived control may be particularly beneficial for older adults managing chronic diseases (Infurna et al., 2011).

The mental health benefits of perceived control are also evident in the context of caregiving. Chung et al. (2020) found that perceived control prevents caregivers from perceiving negative changes in their lives as a result of caring for patients with heart failure. This highlights the importance of supporting both patients and their caregivers to enhance their sense of control and improve overall health outcomes (Chung et al., 2020).

Moreover, perceived control is linked to social support, which plays a crucial role in health outcomes. Stanton and Campbell (2014) found that perceived social support moderates the relationship between attachment anxiety and health outcomes, suggesting that a supportive social network can enhance the benefits of perceived control. This finding is particularly relevant for chronic disease patients, who often rely on social support to manage their condition (Stanton & Campbell, 2014).

The complex interplay between perceived control, health literacy, and health outcomes is further explored by Lu et al. (2023), who developed a moderated mediation model to

examine these relationships among older patients with chronic diseases. Their findings indicate that health literacy enhances the positive effects of perceived control on health outcomes, underscoring the importance of educational interventions to improve health literacy and perceived control among chronic disease patients (Lu et al., 2023).

Keller et al. (2012) also highlighted the significance of perceived control in their study on the perception of stress and its impact on health and mortality. They found that individuals who believed that stress negatively affected their health had a higher risk of mortality, suggesting that perceived control over stress can have profound implications for health outcomes (Keller et al., 2012).

Finally, Ameh et al. (2017) examined the relationships between structure, process, and outcome in assessing the quality of integrated chronic disease management in a rural South African setting. They found that a well-structured and process-oriented approach to chronic disease management improved patients' perceived control and health outcomes. This study reinforces the importance of healthcare system design in enhancing patients' perceived control and overall health (Ameh et al., 2017).

In conclusion, the existing literature underscores the critical role of perceived control in managing chronic diseases. Perceived control influences a wide range of health outcomes, including physical and mental health, health behaviors, and interactions with healthcare systems. Enhancing perceived control through interventions such as health education, social support, and integrated care can lead to better health outcomes for chronic disease patients. This study aims to further explore the influence of perceived control on health outcomes in chronic disease patients, providing qualitative insights into how patients' perceptions of control impact their health and well-being.

2. Methods and Materials

2.1. Study Design and Participants

This study employed a qualitative research design to explore the influence of perceived control on health outcomes among chronic disease patients. Given the complexity and subjective nature of perceived control and its impact on health, a qualitative approach was deemed most appropriate to capture the depth and nuances of patients' experiences.

Participants were selected through purposive sampling to ensure a diverse representation of individuals with various chronic diseases, such as diabetes, hypertension, and chronic

obstructive pulmonary disease (COPD). Inclusion criteria included adults aged 18 and older, diagnosed with a chronic disease for at least one year, and willing to participate in a detailed interview. Efforts were made to include participants from different demographic backgrounds to obtain a comprehensive understanding of the phenomenon.

Data collection continued until theoretical saturation was achieved. Theoretical saturation refers to the point at which no new themes or insights emerge from the data, indicating that further data collection would likely yield redundant information. This ensures that the findings are robust and comprehensive.

2.2. Measures

2.2.1. Semi-Structured Interview

Data were collected through semi-structured interviews, which allowed for flexibility in exploring different aspects of perceived control while maintaining a consistent framework across interviews. An interview guide was developed, including open-ended questions designed to elicit detailed responses about participants' experiences with managing their chronic disease, their sense of control, and how this perception affected their health outcomes.

The interview guide included questions such as:

Can you describe your experience managing your chronic disease?

How do you perceive your level of control over your health condition?

Can you provide examples of situations where you felt in control or out of control?

How do you think your sense of control impacts your health and well-being?

Interviews were conducted either in person or via video conferencing, depending on participants' preferences and availability. Each interview lasted between 45 to 90 minutes and was audio-recorded with the participants' consent for accurate transcription and analysis.

2.3. Data Analysis

The transcribed interviews were analyzed using NVivo software, a qualitative data analysis tool that facilitates the organization and coding of large volumes of textual data. The analysis followed a thematic approach, involving several stages:

Familiarization: Researchers thoroughly read the transcripts to become immersed in the data.

Initial Coding: Transcripts were systematically coded to identify significant themes and patterns. Open coding was used to allow themes to emerge naturally from the data.

Theme Development: Related codes were grouped into overarching themes that captured the essence of participants' experiences.

Review and Refinement: Themes were reviewed and refined to ensure they accurately represented the data and were supported by participants' accounts.

3. Findings and Results

The study included a diverse group of 20 participants, ensuring a wide range of perspectives on the influence of

perceived control on health outcomes in chronic disease patients. The participants' ages ranged from 25 to 75 years, with a mean age of 50. Gender distribution was balanced, with 11 females and 9 males. The participants represented various chronic conditions, including diabetes (7 participants), hypertension (5 participants), and chronic obstructive pulmonary disease (COPD) (8 participants). In terms of educational background, 5 participants had a high school diploma, 10 had completed undergraduate studies, and 5 held postgraduate degrees. The duration of living with their chronic disease varied from 1 to 20 years, with an average duration of 10 years.

Table 1

The Results of Qualitative Analysis

Category	Subcategory	Concepts (Open Codes)
1. Psychological Impact of Perceived Control	1.1 Emotional Well-being	- Stress reduction- Anxiety levels- Depression- Emotional resilience
	1.2 Self-Efficacy	- Confidence in managing disease- Belief in abilities- Motivation- Goal setting
	1.3 Coping Mechanisms	- Problem-solving strategies- Seeking social support- Use of relaxation techniques
	1.4 Quality of Life	- Daily functioning- Life satisfaction- Social interactions
	1.5 Adaptation to Illness	- Acceptance- Psychological adjustment- Reframing illness
2. Behavioral Impact of Perceived Control	2.1 Health-Related Behaviors	- Medication adherence- Diet management- Exercise routines- Sleep patterns
	2.2 Health Monitoring	- Regular check-ups- Self-monitoring practices- Tracking symptoms
	2.3 Decision-Making	- Involvement in treatment choices- Seeking information- Evaluating options
	2.4 Lifestyle Modifications	- Smoking cessation- Alcohol consumption- Engaging in hobbies
3. Social Impact of Perceived Control	3.1 Support Networks	- Family support- Friends' involvement- Community resources
	3.2 Communication with Healthcare Providers	- Open dialogue- Trust in healthcare providers- Satisfaction with care
	3.3 Social Engagement	- Participation in social activities- Volunteering- Social isolation
	3.4 Peer Support	- Support groups- Sharing experiences- Online communities
	3.5 Role of Caregivers	- Caregiver involvement- Caregiver stress- Relationship dynamics
	3.6 Societal Perceptions	- Stigma- Public awareness- Accessibility to resources

3.1. Psychological Impact of Perceived Control

Emotional Well-being: The participants frequently mentioned that a sense of control over their chronic disease significantly impacted their emotional well-being. Those who felt in control reported lower stress levels and reduced anxiety and depression. One participant noted, "When I feel like I have control over my health, my stress levels drop significantly. I don't feel as overwhelmed." Emotional resilience was also highlighted as a crucial aspect of managing the emotional toll of chronic illness.

Self-Efficacy: A strong sense of self-efficacy was evident among participants who believed in their ability to manage their condition. Confidence, motivation, and goal-setting emerged as central concepts. As one participant expressed, "Believing that I can handle my diabetes makes a huge difference in how I approach my treatment plan. I set small goals and celebrate when I achieve them."

Coping Mechanisms: Various coping mechanisms were employed by participants to manage their perceived control. These included problem-solving strategies, seeking social support, and using relaxation techniques. One participant

shared, "I find talking to friends and using relaxation techniques helps me manage better. It makes me feel like I'm not alone in this."

Quality of Life: The sense of control had a direct impact on participants' quality of life, influencing their daily functioning, life satisfaction, and social interactions. A participant mentioned, "Feeling in control of my asthma means I can enjoy my daily activities more and not be constantly worried about flare-ups."

Adaptation to Illness: Participants described adaptation to their illness through acceptance, psychological adjustment, and reframing their illness. One participant reflected, "Accepting my condition was a turning point. It allowed me to adjust my mindset and find ways to live a fulfilling life despite my health issues."

3.2. Behavioral Impact of Perceived Control

Health-Related Behaviors: Participants who felt in control were more likely to adhere to medication, manage their diet, follow exercise routines, and maintain good sleep patterns. One participant explained, "When I feel on top of things, I stick to my medication and diet better. It feels like a positive cycle."

Health Monitoring: Regular check-ups, self-monitoring practices, and tracking symptoms were common among those with a strong sense of control. A participant highlighted, "I keep a close eye on my symptoms and make sure to have regular check-ups. It helps me stay on top of my condition."

Decision-Making: Involvement in treatment choices, seeking information, and evaluating options were crucial behaviors influenced by perceived control. One participant stated, "I always make sure I understand my treatment options and discuss them with my doctor. It makes me feel more in charge of my health."

Lifestyle Modifications: Participants often made lifestyle modifications such as smoking cessation, reducing alcohol consumption, and engaging in hobbies to maintain control over their health. A participant noted, "Quitting smoking was tough, but knowing it's in my control to improve my health made it easier."

3.3. Social Impact of Perceived Control

Support Networks: Family support, friends' involvement, and community resources were essential for participants feeling in control. One participant shared, "Having my

family support me through this journey has been invaluable. It gives me strength to manage my condition."

Communication with Healthcare Providers: Open dialogue, trust in healthcare providers, and satisfaction with care were significant factors. A participant mentioned, "I have a great relationship with my doctor, and I trust her advice. It makes me feel more confident in managing my illness."

Social Engagement: Participation in social activities, volunteering, and avoiding social isolation were influenced by perceived control. One participant remarked, "Staying socially active helps me feel in control and keeps my spirits up. Volunteering has been especially rewarding."

Peer Support: Support groups, sharing experiences, and online communities played a crucial role. As one participant noted, "Joining a support group was one of the best decisions. Hearing others' stories and sharing mine has been incredibly empowering."

Role of Caregivers: The involvement of caregivers, their stress levels, and the dynamics of their relationships with patients were highlighted. A participant commented, "My caregiver's support is crucial, but I also try to be mindful of their stress. We work together as a team."

Societal Perceptions: Stigma, public awareness, and accessibility to resources were issues participants faced. One participant explained, "Dealing with societal stigma can be tough, but raising awareness and finding accessible resources has helped me manage my condition better."

4. Discussion and Conclusion

This study aimed to explore the influence of perceived control on health outcomes among chronic disease patients through qualitative methods. The findings revealed that perceived control significantly impacts psychological well-being, health-related behaviors, and social interactions, corroborating the extensive body of literature on the subject.

The study found that perceived control profoundly affects emotional well-being, self-efficacy, coping mechanisms, quality of life, and adaptation to illness. Participants who reported higher levels of perceived control experienced lower stress and anxiety, and higher emotional resilience, supporting the findings of Infurna, Gerstorf, and Zarit (2011), who demonstrated that perceived control is linked to better emotional health. Lachman (2006) also noted that perceived control mitigates aging-related declines, further emphasizing the psychological benefits.

Self-efficacy, a concept closely related to perceived control, was highlighted by participants as crucial for managing their chronic conditions. This aligns with Salehi et al. (2014), who identified self-efficacy as a key determinant of subjective well-being and lifestyle behaviors. Participants used various coping mechanisms, such as problem-solving and seeking social support, to manage their conditions effectively (Salehi et al., 2014). These strategies are consistent with findings from Kondo et al. (2021), who reported that higher perceived control is associated with better mental health outcomes due to effective coping strategies during stressful situations, such as the COVID-19 pandemic (Kondo et al., 2021).

Participants' health-related behaviors, including medication adherence, diet management, exercise routines, and sleep patterns, were significantly influenced by their sense of control. Infurna and Gerstorf (2014) found similar results, noting that perceived control relates to better functional health and lower cardiometabolic risk due to increased physical activity (Infurna & Gerstorf, 2014). This study's findings also resonate with Janssens et al. (2007), who observed that integrated care models enhance patients' perceived control, leading to better health management behaviors (Janssens et al., 2007).

Health monitoring and decision-making were other crucial aspects influenced by perceived control. Participants who felt in control were more diligent in regular check-ups, self-monitoring practices, and informed decision-making regarding their treatment options. This supports the findings of Marciano, Camerini, and Schulz (2019), who highlighted the role of health literacy in enhancing self-care and glycemic control among diabetes patients. The integration of health literacy with perceived control enables patients to take proactive steps in managing their health, leading to improved outcomes (Marciano et al., 2019).

The social dimensions of perceived control were evident in participants' reliance on support networks, communication with healthcare providers, social engagement, peer support, and the role of caregivers. The importance of family and community support in enhancing perceived control was emphasized by participants, aligning with the findings of Strömberg et al. (2020), who reported that perceived control is linked to fewer depressive symptoms and greater well-being in heart failure patients and their spouses.

Effective communication with healthcare providers was another significant factor. Participants who maintained open dialogues and trusted their healthcare providers reported

higher satisfaction with care and better health outcomes. This finding is consistent with Janssens et al. (2007), who noted that integrated care models improve patient-provider communication, enhancing perceived control and health outcomes (Janssens et al., 2007).

Social engagement and peer support were also crucial for maintaining perceived control. Participants who participated in social activities and support groups reported feeling more empowered and less isolated. Stanton and Campbell (2014) found that perceived social support moderates the relationship between attachment anxiety and health outcomes, suggesting that a supportive social network enhances the benefits of perceived control (Stanton & Campbell, 2014).

The role of caregivers in chronic disease management was highlighted by participants, who stressed the importance of caregiver involvement and the need to manage caregiver stress. Chung et al. (2020) found that perceived control among caregivers prevents negative perceptions of life changes, underscoring the importance of supporting caregivers to improve both patient and caregiver outcomes (Chung et al., 2020).

Participants discussed the challenges posed by societal stigma and the importance of public awareness and accessibility to resources. The study found that enhancing health literacy can significantly improve perceived control and health outcomes. Lu et al. (2023) demonstrated that health literacy enhances the positive effects of perceived control, supporting the need for educational interventions to improve health literacy among chronic disease patients (Lu et al., 2023).

This study has several limitations. First, the sample size was relatively small and may not fully represent the broader population of chronic disease patients. Second, the qualitative nature of the study relies on self-reported data, which may be subject to bias. Third, the study was cross-sectional, limiting the ability to assess changes in perceived control and health outcomes over time.

Future research should consider larger and more diverse samples to enhance the generalizability of the findings. Longitudinal studies are needed to examine the dynamic changes in perceived control and its long-term impact on health outcomes. Additionally, exploring the interplay between perceived control, health literacy, and other psychological factors could provide a more comprehensive understanding of how these elements interact to influence health.

Healthcare providers should focus on enhancing patients' perceived control through educational interventions that improve health literacy and self-efficacy. Integrating care models that facilitate effective communication and provide comprehensive support can help patients feel more in control of their health. Additionally, supporting caregivers and fostering strong social support networks can further enhance the perceived control and well-being of chronic disease patients. Implementing these strategies can lead to better health outcomes and improved quality of life for patients managing chronic diseases.

Authors' Contributions

Authors contributed equally to this article.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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Declaration of Interest

The authors report no conflict of interest.

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Ethics Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

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