LIVED EXPERIENCE AND IMPACT OF ORAL PDE5 INHIBITOR – A QUALITATIVE STUDY AMONG DIABETIC PATIENTS WITH ERECTILE DYSFUNCTION

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Not to forget my dear wife, Dr Farhah Mursyida Roslan, my four superheroes (Khairul Fathi, Khairul Fahmi, Khairul Fitri and Khairul Fikri), and my upcoming baby for their endless prays, support and patience throughout my dissertation preparation.

Dr. Khairul Nazli Ramali 22 November 2022

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ABSTRAK

Latar belakang: Kencing manis adalah penyakit yang biasa dijumpai dan mempunyai banyak komplikasi termasuk kegagalan ereksi.

Matlamat: Untuk meneroka maksud kegagalan ereksi, pengalaman pesakit sebelum mendapatkan rawatan dan kesan *PDE5 inhibitor* kepada kesejahteraan seksual dan hubungan perkahwinan dalam kalangan pesakit kencing manis yang mengalami kegagalan ereksi.

Kaedah: Menggunakan kaedah temubual secara mendalam, kajian kualitatif berdasarkan analisis fenomenologi ini telah dijalankan ke atas 15 pesakit kencing manis dengan kegagalan ereksi yang mempunyai kriteria yang sepadan dengan kajian ini, iaitu berumur 18 tahun dan ke atas, mengambil *PDE5 inhibitor* sekurang-kurangnya tiga bulan, daripada senarai pendaftaran Klinik Kesihatan Lelaki, Klinik Rawatan Keluarga, Hospital Universiti Sains Malaysia. Pesakit yang mengalami kecacatan zakar, sejarah testis tidak turun, ejakulasi pramatang dan mengambil suplemen untuk membantu kegagalan ereksi dikecualikan. Data temubual direkodkan secara audio dan ditranskripsikan secara verbatim dan dimasukkan ke dalam perisian komputer NVivo. Transkripsi dianalisis menggunakan analisis tematik dengan merujuk kepada teori skrip seksual.

Keputusan: Kami telah mengenalpasti tiga tema telah diterbitkan daripada penyelidikan ini. Pesakit kencing manis dengan kegagalan ereksi mengalami gangguan seksual akibat hilang kelelakian, ketidaksempurnaan sebagai seorang lelaki dan suami dan kesan kepada isteri. Rawatan alternatif dipercayai dapat menyembuhkan kegagalan ereksi, dan mereka merasakan manfaat rawatan moden selepas gagal rawatan alternatif. *PDE5 inhibitor* memberikan semula kekuatan seksual dan harga diri dengan ketara, memulihkan kepuasan pesakit dan segelintir pesakit mengalami kesan negatif daripada ubat.

Implikasi klinikal: Penilaian dan penerokaan mengenai kegagalan ereksi untuk pesakit kencing manis harus dilakukan oleh anggota kesihatan semasa konsultasi.

Kekuatan dan kekangan: Penyelidikan ini bernilai dalan amalan klinikal dan memberikan pemahaman asas bahawa banyak faktor yang mempengaruhi kegagalan ereksi dan mengakibatkan ketidakseimbangan emosi individu. Walau bagaimanapun, kami menghadapi kesukaran untuk bercakap tentang isu seksual di Malaysia, kerana ia adalah *taboo*.

Kesimpulan: Penyelidikan ini mendapati bahawa kegagalan ereksi memberi kesan yang ketara kepada kualiti hidup pesakit kencing manis dan *PDE5 inhibitor* membantu meningkatkan fungsi seksual mereka.

Kata kunci**:** *phosphodiesterase inhibitors; kajian kualitatif; kencing manis; kegagalan ereksi*

ABSTRACT

Background: Diabetes mellitus is a common medical condition and it has many complications, including erectile dysfunction.

Aim: To explore patients experience prior to initiating treatment, and the impact of PDE5 inhibitors on sexual well-being and marital relationship among diabetic patients with erectile dysfunction.

Methods: Using the in-depth interview methods, this qualitative study following phenomenological analysis was conducted on 15 diabetic patients with erectile dysfunction The inclusion criteria of this study are aged 18 years and above, and on PDE5 inhibitor for at least three months from the registration list of Men's Health Clinic, Klinik Rawatan Keluarga, Hospital Universiti Sains Malaysia. Those patients with anatomical penile deformities, a history of undescended testes, premature ejaculation, and on a supplement to help erectile dysfunction were excluded. The interview data were audio-recorded, transcribed verbatim and entered into the computer software Nvivo. The transcriptions were analysed using thematic analysis by referring to the sexual script theory.

Results: We identified three themes from this study. Diabetic patients with erectile dysfunction develop sexual distress due to loss of manhood, inadequacy as a husband and consequences to their wife. Alternative therapy is believed to cure erectile dysfunction, and they perceive the benefit of conventional medicine after the failure of complementary medicine. PDE5 inhibitors significantly regain sexual strength and self-esteem, restore couple satisfaction, with some patients facing the negative side of medication.

Clinical Implications: Assessment and exploring the impact of erectile dysfunction for men with diabetes mellitus should be initiated by those healthcare professionals who directly support men with diabetes mellitus during consultation.

Strengths and Limitations: This study is valuable in the clinical setting and can provide a fundamental understanding of the many factors that affect the issue of erectile dysfunction and results in the emotional imbalances of the individuals. However, we have difficulties discussing the sexual issue in Malaysia, as it is taboo.

Conclusion: This study found that erectile dysfunction significantly impacts the sexual life of men with diabetic mellitus and that PDE5 inhibitor helps to improve their sexual function.

Keywords: *phosphodiesterase inhibitors; qualitative research; diabetes mellitus; erectile dysfunction*

CHAPTER 1

INTRODUCTION

1. INTRODUCTION

Diabetes mellitus (DM) is a chronic disease strongly associated with sexual problems (1). Patients with DM can develop sexual problems through diabetic-induced end-organ damage and psychological stress (2). Erectile dysfunction (ED) is an under-recognized complication of DM experienced by millions of men worldwide (3). By 2025, it is anticipated that 322 million men will suffer from ED worldwide (4).

ED affects approximately 20-85% of men with DM and has been revealed to impact their sexual life negatively (4, 5). One study reported a threefold possibility of having ED in men with diabetes compared with non-diabetic men (6). Another recent study reported that men aged 50-59 years have a 3.6 times higher risk for developing ED than men aged 18-29. In addition, a greater risk can be found among men with DM over 60 (7).

ED is a consequential condition for men that involves diminished sexual function capacity, psychological distress, and loss of intimacy in relationships, which may lead to a reduced sexual life among men and their partners (8, 9). Although the impacts of ED have been documented, it remains a clinically neglected condition. The evidence indicates low rates of consultation, ongoing medical ED interventions and adherence to therapy among men with DM who have ED (10, 11). To our knowledge, no previous studies have clearly explained the factors behind these low rates. Instead, most previous studies have focused on the effectiveness of treatment. Thus, increasing understanding of men's perceptions and experiences regarding ED appears critical for treating men with ED.

Among men, gender and sexuality are difficult to separate (12). The ability to maintain an erection and perform sexual activities has been described as the core of men's role (13). ED can disrupt normal sexual function, such as being unable to achieve or maintain an erection and lack of desire for sex. These changes to men's sexuality can undermine their image of manhood. Most men find coping with ED difficult and quite challenging to overcome (9, 12, 13).

Sexual satisfaction is considered a significant predictor of life satisfaction. Treatment of ED would likely improve the sexual for these individuals and their partners (14). Several therapeutic options are available for the treatment of ED. One of these options is a phosphodiesterase type 5 (PDE5) inhibitor. PDE5 inhibitor has revolutionized the management of ED since it offers advantages over other medical approaches in terms of ease of administration and costs. PDE5 inhibitors are one of the first-line treatments for patients suffering from ED (15).

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CHAPTER 2

OBJECTIVES

OF THE STUDY

2. OBJECTIVES

2.1 GENERAL OBJECTIVE

To explore the lived experience and impact of ED among DM patients.

2.2 SPECIFIC OBJECTIVES

1. To explore patients' perceptions of ED and their experiences prior to initiating treatment among DM patients
2. To explore the impact of oral PDE5 inhibitors on sexual well-being and marital relationship among DM patients

2.3 OPERATIONAL DEFINITIONS

ED is defined as an inability to achieve or maintain an erection sufficient for satisfactory sexual performance. According to the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), ED is diagnosed when one or more of the following symptoms persist for six months or more: (1) Inability to get an erection during sexual activity, (2) Inability to maintain an erection long enough to finish a sexual act, (3) Inability to get an erection that is as rigid as previously experienced. The severity of ED is described as mild, moderate or severe according to the five-item International Index of Erectile Function (IIEF-5) questionnaire. A score of 1-7 indicates severe, 8-11 moderate, 12-16 mild-moderate, 17-21 mild and 22-25 no ED.

CHAPTER 3

MANUSCRIPT

3. MANUSCRIPT

3.1 TITLE

Lived experience and impact of oral PDE5 Inhibitor – A qualitative study among diabetic patients with erectile dysfunction

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3.3 ABSTRACT

Background: Diabetes mellitus is a common medical condition and it has many complications, including erectile dysfunction.

Aim: To explore patients experience prior to initiating treatment, and the impact of PDE5 inhibitors on sexual well-being and marital relationship among diabetic patients with erectile dysfunction.

Methods: Using the in-depth interview methods, this qualitative study following phenomenological analysis was conducted on 15 diabetic patients with erectile dysfunction The inclusion criteria of this study are aged 18 years and above, and on PDE5 inhibitor for at least three months from the registration list of Men's Health Clinic, Klinik Rawatan Keluarga, Hospital Universiti Sains Malaysia. Those patients with anatomical penile deformities, a history of undescended testes, premature ejaculation, and on a supplement to help erectile dysfunction were excluded. The interview data were audio-recorded, transcribed verbatim and entered into the computer software Nvivo. The transcriptions were analysed using thematic analysis by referring to the sexual script theory.

Results: We identified three themes from this study. Diabetic patients with erectile dysfunction develop sexual distress due to loss of manhood, inadequacy as a husband and consequences to their wife. Alternative therapy is believed to cure erectile dysfunction, and they perceive the benefit of conventional medicine after the failure of complementary medicine. PDE5 inhibitors significantly regain sexual strength and self-esteem, restore couple satisfaction, with some patients facing the negative side of medication.

Clinical Implications: Assessment and exploring the impact of erectile dysfunction for men with diabetes mellitus should be initiated by those healthcare professionals who directly support men with diabetes mellitus during consultation.

Strengths and Limitations: This study is valuable in the clinical setting and can provide a fundamental understanding of the many factors that affect the issue of erectile dysfunction and results in the emotional imbalances of the individuals. However, we have difficulties discussing the sexual issue in Malaysia, as it is taboo.

Conclusion: This study found that erectile dysfunction significantly impacts the sexual life of men with diabetes mellitus and that PDE5 inhibitor helps to improve their sexual function.

Keywords: *phosphodiesterase inhibitors; qualitative research; diabetes mellitus; erectile dysfunction*

3.4 INTRODUCTION

Diabetes mellitus (DM) is a common medical illness defined by impaired glucose tolerance. It is associated with various complications and physical consequences. DM, either type 1 or 2, has been linked to an increased risk of erectile dysfunction (ED). Several studies have associated ED with cardiovascular risk factors like DM, smoking, hypertension, hyperlipidemia, metabolic syndrome, depression, lower urinary tract symptoms and poor health. Moreover, ED is a marker of significantly increased risk of cardiovascular disease, coronary heart disease, stroke and all-cause mortality (1). The studies found that people with DM have a frequency of ED that ranges from 35% to 90% worldwide (2, 3). A local study in Kelantan, with the majority of the population being Malays and Muslims (4), found that the prevalence of ED was 78% among men attending health centres in Kelantan (5).

With the increasing prevalence of ED, there has been a significant negative impact on the sexual life of affected individuals and their partners (6, 7). Compared to men who do not have ED, those who do have it have a lower sexual life across various physical and psychological characteristics, including their level of self-esteem (8). Because the inability to function sexually can erode an individual's self-esteem and lead to emotional and marital tension, it is not surprising that sexual life is diminished in men with ED (9). Satisfaction with sexual life is an important predictor of satisfaction with life (10). ED can negatively impact many men whose sexual life is already impaired by comorbid medical conditions. The psychological pain induced by ED can be more disabling than the physical problems associated with chronic illness (11).

Although ED is a common health problem, only one-tenth of men with ED seek medical advice about their problem (12). One of the reasons for not seeking medical advice was how the men perceived ED and its treatment. Cultural and psychosocial factors partly influenced their perceptions and attitudes toward ED and its treatment (13). Malays regarded ED as an illness an felt that the impacts of ED on their relationship with their partners were significant, thus they were motivated to seek treatment. Compared to Chinese and Indian, they perceived ED was a less severe problem. The Chinese believed that psychosocial problems, low self-esteem and anxiety were the cause of ED, and they tended to be more accepting if it was due to aging. Indians atributed ED to fated and experienced less impact on their relationship (13).

There has been a significant change in ED patients' management during the last decade. This has been due to an improved understanding of erectile physiology and the development of new and effective medical therapies such as phosphodiesterase 5 (PDE5) inhibitors and several other types of medication (14). PDE5 inhibitors have shown to be the most effective treatment option among the several drugs available due to the ease with which they are administered and their widespread acceptance among patients (15).

Most research has focused on the attitudes and responses to ED and what leads to men seeking or avoiding the treatment. Loss of self-esteem, mental health problems, and deterioration in sexual and overall quality of life that men with ED have been well-documented (16). However, not much research has focused on the experiences and impact of PDE5 inhibitors on DM patients with ED in Malaysia. According to our knowledge, only one study was conducted in Klang Valley, Malaysia, focusing on perceptions of ED

and its treatment among men with ED (17). Recent data is lacking regarding the experiences and impact of PDE5 inhibitors in Kelantan. Therefore, this study explores the meaning of ED, their experiences prior to initiating treatment, and the impact of PDE5 inhibitors on sexual well-being and marital relationship among DM patients with ED.

Sexual script theory was adopted to understand the lived experience and impact of PDE5 inhibitors on DM patients with ED. Simon and Gagnon hypothesized that sexuality and sexual behaviour are social processes rather than biological imperatives, and scripts are metaphors for conceptualizing behavioural conduct. Scripting exists at three distinct levels: sociocultural scenarios, interpersonal scripts, and intrapsychic scripts that transect in static or dynamic ways but are not necessarily equally relevant to all situations (18, 19). The sexual script of ED constructs mainly according to the degree of impact they experienced following the disease and its treatment, the meaning of sexuality they perceive and how they prioritize it, context-based identities, such as gendered role belief set by the tradition and religion, and the self- and spouse acceptance toward the phenomenon. Since qualitative studies on the lived experience and impact of PDE5 inhibitors are still lacking, the findings are essential to improve sexual health among DM patients with ED.

3.5 METHODOLOGY

This study was conducted using the qualitative method. The qualitative method allows us to study sexual issues in-depth without being constrained by pre-determined categories of analysis and allow the participants to voice out their valuable experiences. This method is the most appropriate approach for these vulnerable individuals or marginalised groups when the researchers have limited knowledge of the participants and their worldviews (20). Edmund Husserl's exploratory phenomenological approach was applied to understand the experience of type 2 DM patients living with ED by empowering them to share their personal stories (21).

I identified type 2 DM patients with ED that matched the inclusion criteria of this study, aged 18 years and above, and on PDE5 inhibitor for at least three months from the registration list of Men's Health Clinic, Klinik Rawatan Keluarga, Hospital Universiti Sains Malaysia. Those patients with anatomical penile deformities, a history of undescended testes, premature ejaculation, and on a supplement to help ED were excluded. This study used the purposive sampling method as it aids the researcher in looking for cases that can provide rich or in-depth information about the issue being examined. These patients had no relationship and had never been treated by me before the study.

A nurse in Men's Health Clinic at Klinik Rawatan Keluarga, Hospital Universiti Sains Malaysia, was appointed key person for recruitment. I briefed the key person about the study, particularly the potential participants' inclusion and exclusion criteria, and asked him to identify such patients in the clinic. Patients who had been identified were invited

to join this study by sending them an invitation letter before their clinic visit or via email, phone message or WhatsApp messenger. After receiving a show of interest from the patients, I contacted them to explain the reasons for doing this study, provide a more detailed explanation and arrange the interview appointment. I had difficulties contacting a few participants since they were not answering the phone. A few participants could not come during the allocated interview date, so I needed to reschedule their interview.

Two tools were used for this study are sociodemographic form and semi-structured questionnaire. Participants had to fill out the sociodemographic form before proceeding with the interview. The form includes age, gender, ethnicity, religion, marital status, occupation and DM history, specifically duration, medication, control, complications and other comorbidities. The questions in the interview guide were (i) What do you know about ED? Can you tell me about how do you feel about ED? When do you start to suffer from ED (ii) What are your sexual experiences before taking PDE5 inhibitors? What do you feel before taking PDE inhibitor? (iii) Are there any challenges before taking PDE5 inhibitors? If yes, can you tell me what are the challenges? Why do you think the challenges exist? How do you overcome the challenges? (iv) What do you do to deal with ED? What are the facilitators to seek treatment? (v) What do you feel after taking PDE5 inhibitor? How is your sexual well-being and relationship with your partner after taking PDE5 inhibitor? In your opinion, what is the best way to provide holistic and competent care for ED? A pilot study was conducted on three DM patients with DM to test the interview guide's content, length and clarity. The interviews were conducted during the pilot was recorded and transcribed. The transcripts from the pilot study were discussed with researchers to review the questions' clarity, and there was no change made to the interview guide. The data from the pilot study were not included in the final analysis.

On the day of the interview, I, a male medical officer (MO) with an MD qualification, currently doing postgraduate training as Family Medicine Specialist and having a special interest in men's health, explained the purpose of the study again and asked for written consent from the participants before starting the interview. Participants must sign a written consent form and complete a brief sociodemographic form. No participant refused to participate in this study. I interviewed the participants in a consultation room at Klinik Rawatan Keluarga, Hospital Universiti Sains Malaysia, and no one else was in the room. Since discussing the sexual issue is taboo in Malaysia, I gave the participants privacy, so they could express themselves freely and discuss the topic openly. At the start of the interview, I informed the participants that I would like to know their experience taking PDE5 inhibitors and their opinion, feelings, understanding, hope and outcome of this medication. A semi-structured questionnaire guide was used while conducting the face-to-face interview. They were asked to elaborate on their diabetes life journey, having suffered from ED, leading them to take PDE5 inhibitor. I am a novel qualitative researcher and may not be well-experienced in handling difficult topics such as ED. Even though I am a medical officer, it is still a difficult topic for participants to open up during the interviews. I observed this during the interviews from the muted responses of some participants. To overcome this, I built rapport first with the participants before conducting the interviews. The interviews took approximately one hour, and the participants chose to converse in English or Malay. The field notes were made after the interviews. The interviews were conducted once, and the conversations were audio-recorded for subsequent transcription and analysis. Data saturation was achieved after interviewing fifteen participants.

The entire content of each of the interviews was used as raw data. Those interviews were transcribed verbatim and returned to participants for comment. I entered the transcripts into Nvivo (Qualitative Data Analysis) computer software for further analysis. I coded the data, and then as a peer debriefing session, ND and AMZ coded the data independently. New codes were continuously added to Nvivo as they appeared in subsequent transcripts during this process. Similar codes in the participants' words and the researchers' interpretation were grouped to develop subthemes. The connected or interrelated subthemes were grouped as main themes. The emerging themes were refined and discussed with all researchers, who are experts in qualitative study, RM and SBI, to ensure the study's rigor. Additionally, three were invited to comment on the findings to ensure that the reported interpretations accurately represented their experiences, and all agreed with the reported interpretations.

The study was granted ethical approval from the Human Ethics Committee, Universiti Sains Malaysia; USM/JEPeM/21040314. It was challenging to get ethical approval for the study, as I needed to do a few corrections and defend why I wanted to conduct the study and how the interview process would go.

3.6 RESULTS

3.6.1 Demographics and characteristics of participants

A total of fifteen men were interviewed in this study (Table 1), ranging in age from 30 to 73 years, with a mean age of 57.1 years. All participants were married, with two of them having more than one wife. Most participants had uncontrolled DM with an HbA1c level of more than 6.5% and suffered DM complications, including retinopathy, nephropathy, neuropathy and diabetic foot. All participants had a a history of or current health conditions, which included hypertension, dyslipidemia and obesity.

Three main themes emerged in the lived experience and impact of PDE5 inhibitor among DM patients with ED: (i) Sexual distress following ED, (ii) The influence of socioculture in managing ED, and (iii) The overall impact of ED medication (Table 2).

3.6.2 Meaning of ED

All participants agreed that ED means the penis fails to become or stay erect during sexual activity. A few participants used different terms, such as ‘inner energy weakness’ and ‘genital weakness’ to describe ED.

> *“The penis did not function as intended, and it could not ‘stand’ anymore, doctor.” (P1)*

Some participants mentioned that the desire to have sex remains there. However, their sexual activity was affected due to the inability of the penis to become rigid.

> *"In simple language, the feeling was there, but it (penis) was just not that hard." (P4)*

Participants believed that their ED was caused by multiple factors, which included chronic illness such as DM, hypertension and dyslipidemia, aging process and emotional disturbance, especially stress.

> *"I though this was normal things because I am getting older. Over time, it got worse." (P1)*

> *"Based on my knowledge, 'mati pucuk' can occur due to several conditions, either physical or psychological problems. We usually hear that diabetes, hypertension and high cholesterol can cause erectile dysfunction, but stress can also contribute to it." (P6)*

A few participants also used metaphors to explain how ED develops.

> *"I used to work as technician. For example, we switched on the switch to turn on the light. What will happen if there is a short or broken wire? The light must not turn on, right? Same as this thing." (P7)*

3.6.3 Themes

3.6.3.1 Mental distress following ED

The majority of participants had emotional changes following ED. Younger or newly married participants were more affected than the older ones. Living with ED affected not only the men's self-esteem but also impacted the mental health of the participants' wives, and these emotions might damage their marital relationship.

3.6.3.1.1 Feeling of loss of manhood

The participants who suffered from ED had not able to perform sexually, and this can be very frustrating. They expressed a deep blow to their ego and sense of themselves as real men when they had ED.

> *"Having this is stressful because it is important for men like us, and it feels like we are not men if this does not work." (P1)*

When the younger participants had ED, this can be even more distressing for various reasons, including the ability to have a child.

> *"I felt quite distressed. I thought I wanted to have another child; because I am still young. However, considering my situation, it is difficult." (P4)*

3.6.3.1.2 Feeling of inadequacy as a husband

When the participants were not able to perform sexually well, they might have the feeling that they were inadequate as a man and husband. The participants expressed shame, guilt and sad about not satisfying the wife's desires and showing concern towards the wife.

> *"I felt ashamed and guilt with myself as a husband. Because it is my responsibility as a husband to provide for my wife. However, I could not fulfil this responsibility because I had erectile dysfunction." (P7)*

> *"I was sad because I felt sorry for my wife, and I could not satisfy and fulfil her needs. I did not care if this affected me alone, but it affected my wife." (P2)*

Few participants felt a sense of inadequacy which cause them to think of themselves as inferior to others.

> *"I knew that I could not fulfil her sexual desire. When a few of my friends talked about this topic, I just kept quiet because I felt inferior to them. (P10)*

3.6.3.1.3 Consequences to wife

Since sex is a two-way relationship, ED affects both participants and wives. Thus, depending on the behaviours and reactions of the participants to this problem, the wives' responses can be different, such as dissatisfaction, disappointment or refusal to have sex.

"She was not satisfied and easily disappointed when we had sex. Over time, we rarely have sex. Furthermore, when I asked to have sex, she would refuse or look for an excuse." (P7)

Older wives, especially those already in menopause, were not affected so much when their husbands had ED. In contrast, sexual desire in older men is usually maintained.

"I think women are different from men. When she is old and reaches menopausal age, she is okay if we cannot not have sex because of my erectile dysfunction." (P3)

One participant expressed that his wife was so understanding and could accept his fate of having ED.

"I am grateful because my wife was quite understanding of my situation. She gave me much encouragement. So, if I did not have sex with my wife was not a big deal. She said if I could, she was okay. However, I could not. She is also okay. Everyone could accept fate." (P8)

3.6.3.2 The influence of socioculture in managing ED

All participants preferred to seek complementary treatment for an average of two to three years before seeking medical treatment at the clinic. Among the reasons included being private about erectile dysfunction, wanting to try complementary treatment first and

easily getting supplements from online shopping or border countries (Thailand or Indonesia). Some participants felt there was limited availability of services in Kelantan.

3.6.3.2.1 Alternative therapy is believed to cure ED

According to participants, complementary medicine has a great reputation for treating various diseases. For the treatment of ED, its usage is substantially prevalent among Malaysians. Among the complementary that the participants used were traditional pills, massage oils and kratom water. Kratom water is believed to improve ED by improving energy levels, reducing anxiety, and stimulating euphoria. However, they stopped drinking kratom after experiencing its side effects.

> *"We cannot run away from traditional medicine. People used traditional herbs, massage oils and kratom water to use alternative medicine to treat various diseases. In erectile dysfunction, people believed kratom water can restore energy and stimulate us." (P7)*

> *"Some people suggested to me to drink kratom water. I had tried to drink it, but no effect on me. It just made me feel dizzy. I had only tried that once, and that is because my friend offered me. Nowadays, people like to make their own medicine." (P13)*