

Impact of Educational Aid in Pharmacist Counselling on Quality of Life in Psoriasis Patients

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Abstract— Introduction: Psoriasis can negatively affect quality of life (QOL). Counselling psoriasis patients may improve their condition and enhance their QOL. Thus, the objective of our study was to measure the impact of educational aid in pharmacist counselling on QOL in psoriasis patients. **Methodology:** We conducted a pre-post intervention study from September 2017 to February 2018. Inclusion criteria were adult psoriasis patients receiving treatment in Raja Perempuan Zainab II Hospital, Kelantan, Malaysia. Patients who participated in Pharmacy Value Added Service were excluded. A flipchart containing information on the disease and treatment for psoriasis was developed and pilot-tested on 20 subjects. During the first visit, patients were instructed to complete the Dermatology Life Quality Index (DLQI) questionnaire followed by pharmacist counselling. Post-assessment using the same questionnaire was done after 2 months. Data were analysed using SPSS version 20.0. **Results:** We recruited 70 patients which consisted of 37 (52.9%) male and 33 (47.9%) female. Overall, there was a statistically significant improvement in QOL following intervention based on DLQI score [8.64(5.66) vs 5.60(5.35), 95% CI (2.23, 3.86), $p < 0.001$]. During the first visit, majority rated psoriasis had moderate effect on their QOL (34.3%, $n=24$) while after intervention, most of the patients found that psoriasis had little effect on their QOL (37.1%, $n=26$). **Conclusion:** We noted that the use of educational aid as a part of pharmacist counselling could lead to improvement in QOL among psoriasis patients. Therefore, it should be utilized in other facilities as well.

Keywords— Dermatology Life Quality Index; educational aid; pharmacist counselling; psoriasis; quality of life.

I. INTRODUCTION

Psoriasis is a complex, chronic inflammatory disease of the immune system. It involves primarily the skin and joints, but may affect scalp and nails as well [1]. It is characterized by accelerated growth of skin cells that causes rapid buildup on the surface of the skin. This hyperproliferation of the epidermis forms thick, red and scaly lesions that are itchy and painful [2].

Approximately 2.0% to 3.0% of the world's population are diagnosed with psoriasis [3]. The reported prevalence of psoriasis in countries varies between 0.09% and 11.4%, making psoriasis a serious global problem [4]. According to Choon et al. (2014), psoriasis contributes to 2.0 to 6.0% of yearly dermatology clinic new attendees in Malaysia [1]. To date, a total of 15,794 adult patients were notified to the Malaysian Psoriasis Registry between July 2007 and December 2016 [3].

There are several manifestations of psoriasis. The most common was plaque psoriasis or psoriasis vulgaris which accounted for 85.1% of patients, followed by guttate psoriasis (2.9%), erythrodermic psoriasis (1.7%) and pustular psoriasis (1.0%) [1], [3]. Psoriasis is a life-long condition, without any cure which can develop at any point of age and equally occur in both genders [2], [3]. Patients with severe degree of psoriasis are prone to complications of depression and metabolic syndrome, namely obesity, diabetes mellitus, dyslipidemia, and hypertension [1], [2], [5]. Therefore, psoriasis can negatively affect quality of life (QOL) even though it is not usually life-threatening. Its consequences on QOL can be huge and comparable to other chronic diseases [5]–[7].

QOL has been regarded as an important outcome measure in dermatology clinical practice [8]. A study in a large cohort of psoriasis patients revealed that there was at least a moderate impairment of QOL due to the disease [9]. Nyut et al. (2015) also noted that their patients believed psoriasis had moderate to very large effect on their life [10]. These effects include physical function, emotional function, self-esteem, psychological stress, social activities, relationships, occupational aspect and even financial burden [4], [10], [11].

Educating patients with psoriasis may improve their mental and psychological condition as well as enhancing their QOL. Such counselling should be aimed at increasing personal control, encouraging patients to express emotions, seek social support and distract themselves [11]. Pharmacologic intervention should be accompanied by efficient patient education to support patient self-management in daily life with psoriasis [12]. Systematic review has shown that educational materials along with other types of interventions can help to improve pharmacist counselling [13]. Thus, the objective of our study was to measure the impact of educational aid in pharmacist counselling on QOL in psoriasis patients.

II. METHODOLOGY

A. Design and Study Population

We conducted a pre-post intervention study from September 2017 until February 2018. The inclusion criteria were adult psoriasis patients receiving treatment in Raja Perempuan Zainab II Hospital (HRPZ II), Kelantan, Malaysia. Patients who participated in Pharmacy Value Added Service were excluded.

B. Intervention

We developed a flipchart containing details on the disease and treatment for psoriasis. The information was gathered from recent local and international clinical practice guidelines [1], [4], [14]. Assessment of content validity was done based on expert opinion by panels of dermatologists, senior medical officers working in dermatology clinic and pharmacists. To ensure face validity, the flipchart was tested in a pilot study of 20 subjects. Modifications to the flipchart was done according to the comments and recommendations received throughout the process.

C. Data Collection

We determined eligible patients at outpatient pharmacy counter in HRPZ II when they came to refill their prescriptions. The patients were adequately informed and voluntarily consented before they were recruited in the study. The study design allowed for two visits. At the first visit, subjects were instructed to complete self-administered Dermatology Life Quality Index (DLQI) questionnaire. Then they were counselled based on the medication prescribed by the doctor using the flipchart as an educational aid. Post-assessment using the same questionnaire was done after 2 months.

The dermatology-specific health-related quality-of-life (HRQoL) instrument was measured using Dermatology Life Quality Index (DLQI). DLQI is a self-reported questionnaire to measure how much a skin problem has affected the life of the patient over the previous 7 days. It consists of 10 questions, 6 sections and an overall summary score. Each question has 4 alternative answers: “not at all”, “a little”, “a lot”, or “very much”, with scores of 0, 1, 2 and 3, respectively. The 6 sections cover symptoms and feelings (questions 1 and 2), daily activities (questions 3 and 4), leisure (questions 5 and 6), work / school (question 7), personal relationships (question 8 and 9) and treatment (question 10). The overall summary score is calculated by summing the score of each question, resulting in a maximum of 30 and a minimum of 0. The higher the score represents the more the quality of life is impaired. DLQI score of 0-1 is interpreted as no effect, 2-5 as small effect, 6-10 as moderate effect, 11-20 as very large effect, and 21-30 as extremely large effect on patient’s life [15], [16]. Permission was obtained from the authors before the questionnaire was utilized.

The sample size required for the study was calculated based on the ability to detect a medium effect size or larger clinical effect (Cohen’s $d=0.5$) and tested at a conventional power of 0.8 and alpha of 0.05 (two-tailed testing) which yielded a minimum number of 64 subjects [17]. Allowing for 10.0% dropout, a final sample size of 70 subjects was used.

D. Statistical Analysis

We analysed the data using Statistical Package for Social Sciences (SPSS) version 20.0. Descriptive statistics of mean(SD), frequency and percentage were applied where appropriate. Paired t-test was employed to compare the mean differences in DLQI scores before and after intervention. A p -value of 0.05 was considered as statistically significant.

E. Ethical Approval

We obtained ethical approval for this research from the Medical Research and Ethics Committee (MREC), Ministry of Health Malaysia (NMRR-17-2294-37794), dated on 24th of October 2017. Meanwhile, permission to conduct the study at the site was granted by the Director of HRPZ II.

III. RESULTS

A. Demographic Characteristics

We recruited a total of 70 subjects for this study. There were almost similar numbers of male and female patients ($n=37$ and $n=33$, respectively). Participants had mean (SD) age of 46.47 (14.20) years old. The majority of patients were below 50 years old (58.5%, $n=41$), Malay (95.7%, $n=67$) and married (81.4%, $n=57$). Many had up to secondary education (55.7%, $n=39$), working (58.5%, $n=41$) and suffered from psoriasis for over 5 years (54.3%, $n=38$) (Table 1).

TABLE 1. Demographic characteristics of subjects ($n=70$).

Demographic characteristics	N	%
<i>Gender</i>		
Male	37	52.9
Female	33	47.1
<i>Age (years old)</i>		
18-50	41	58.5
>50	29	41.4
<i>Ethnicity</i>		
Malay	67	95.7
Non-Malay	3	4.3
<i>Marital status</i>		
Single	13	18.6
Married	57	81.4
<i>Education level</i>		
No-primary education	10	14.3
Secondary education	39	55.7
Tertiary education	21	30.0
<i>Employment status</i>		
Employed	22	31.4
Self-employed	19	27.1
Others (unemployed, students, pensioners and housewives)	29	41.5
<i>Duration of psoriasis (years)</i>		
≤ 10	47	67.1
> 10	23	32.9

B. QOL in Psoriasis Patients Based on DLQI Scores

We noted that there was a statistically significant improvement of QOL following intervention when compared between pre- and post-assessment of DLQI scores using paired t-test [8.64 (5.66) vs 5.60 (5.35), 95% CI (2.23, 3.86), $p<0.001$] (Table 2).

TABLE 2. Total DLQI scores pre- and post-assessment.

Score	Mean	SD	p -value
<i>DLQI scores</i>			
Pre	8.64	5.66	<0.001
Post	5.60	5.35	

During the first visit, majority rated psoriasis had moderate effect on their QOL (34.3%, $n=24$) while after intervention, most of the patients found that psoriasis had little effect on

their QOL (37.1%, n=26). There were improvements in all categories of QOL during the second visit (Table 3).

TABLE 3. Comparison of QOL pre- and post-assessment based on DLQI scores (n=70).

QOL	Pre-assessment n (%)	Post-assessment n (%)
No effect	3 (4.3)	14 (20)
Little effect	20 (28.6)	26 (37.1)
Moderate effect	24 (34.3)	21 (30)
Large effect	20 (28.6)	7 (10)
Extremely effect	3 (4.3)	2 (2.9)

IV. DISCUSSION

Our descriptive analysis on the demographic characteristics revealed that psoriasis affects both genders equally. A recent work involving 5,438 Swedish patients with psoriasis noted that there were more men than women who suffered from psoriasis (59.8%, n=3,252 versus 40.2%, n=2,186) [18]. All in all, previous evidences [19] especially in the local setting showed that prevalence of psoriasis was balanced between sexes [3], [6], [10]. The mean (SD) age of our study population was younger when compared with Kwan et al. (2017) which was 50.9 (17.7) years old. Another study in Kuala Lumpur by Nyut et al. (2015) saw that their subjects were mainly of the age 51 to 60 years old (25.9%, n=57). As for the ethnicity, Malay was predominant in our setting which concurred with Mohd Affandi et al. (2018) who noted that 50.5% (n=7,968) of Malay patients registered in the Malaysian Psoriasis Registry from 2007 to 2016 [3].

Our mean (SD) baseline DLQI score was comparable to Mohd Affandi et al. (2018) which was 8.5 (6.6) [3]. The score indicated that psoriasis had moderate effect on overall patients' lives. We shared some similarities with Nyunt et al. (2015) whereby they reported that one-third (33.6%, n=223) of their patients had DLQI score of ≥ 10 , which showed severe impairment of QOL. Their study also noted that only a few (3.14%, n=7) rated that psoriasis had no effect at all on their QOL [10].

The key component of the management of psoriasis is pharmacist counselling as it ensures successful therapeutic outcome [7], [20]. It is important to constantly improve the patient materials in order to deliver the counselling in the utmost effectual manner [20]. We choose to develop a flipchart as it can provide essential information regarding the disease and treatment. Furthermore, it is a useful tool as it can conveniently include pictures and lists of notes to assist the counselling [21].

We found that the use of the flipchart as an educational aid in pharmacist counselling was effective as there was a significant improvement of DLQI scores after intervention. The finding was in lined with the observational study by Mohd Affandi et al. (2018) who reported that minus any intervention, there was only a slight reduction of mean (SD) DLQI scores after 6 months of follow up [8.51 (6.58) vs 8.29 (6.56)]. This was also consistent with the intervention work by Sneha et. al (2018) who found that there was a significant increase in QOL score when measured after 45 days of patient counseling [23]. It was further supported by Nagarajan and

Thappa (2018) who managed to prove that using video and pamphlet as educational aids had the advantage to significantly increased knowledge, enhanced QOL and gave psychological relief in patient with psoriasis [22]. Other methods of educational aids and interventions comprise care, information, reminders, self-monitoring, reinforcement, family therapy, psychological therapy, crisis intervention, telephone follow-up and supportive care [7].

Majority of patients proclaimed that they required more information, particularly on topical treatments and their side effects [22]. This clearly indicated that pharmacists have a principal role in educating patients on the therapy for psoriasis. The fundamental points in pharmacist counseling should be centered around safety, efficacy as well as adherence towards the treatment [11]. Education on both specific treatment and general measures such as rest and emollients are necessary as to ameliorate the QOL of psoriasis patients.

However, our study had several limitations. First, this was a pre-post intervention study without a control group. In addition to the small sample size, we utilized convenience sampling at a single centre site. Therefore, the results should not be applied to other psoriasis patients outside of HRPZ II. We also did not have the data on potential effect of behaviour factors, such as alcohol consumption, cigarette smoking and use of antidepressants on QOL. Notwithstanding these limitations, we believe that the outcomes of this research are still worth noting and can be of future reference.

V. CONCLUSION

From our study, we conclude that counselling plays an important role in the patient's QOL as the result clearly shown an increment in the QOL in patients after counselling than before counselling. Thorough medication counselling with the use of flipchart as and educational aids can lead to improvement in QOL among psoriasis patients. Therefore, this educational aid should be included as part of medication counselling in HRPZ II.

ACKNOWLEDGMENT

We would like to thank the Director General of Health Malaysia for his permission to publish this paper. No external organization was involved in this research project as it was self-funded by the authors.

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