ORIGINAL ARTICLE

Validation of the Malay version of Autoimmune Bullous Disease Quality of Life (ABQOL) questionnaire

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Abstract

Introduction

Autoimmune blistering diseases (AIBD) represent a group of rare and chronic disorders with significant impact on quality of life (QoL). The aim of this study was to assess the validity and reliability of the Malay translation of the autoimmune bullous disease quality of life (ABQOL) questionnaire.

Methods

This was a cross-sectional, questionnaire based study involving 75 patients with AIBD. The Malay version of ABQOL was produced by forward-backward translation of the original ABQOL. This was then administered to patients with pemphigus vulgaris, pemphigus foliaceous and bullous pemphigoid along with validated Malay versions of Dermatology Life Quality Index (DLQI) and Short Form Health Survey (SF-36) questionnaires. Validity was evaluated across a range of indices and reliability was assessed using internal consistency and test-retest methods.

Results

Internal consistency and test-retest reliability were high (Cronbach alpha= 0.940, r= 0.89). The Malay ABQOL had high correlation with the DLQI (r=0.73. p<0.001) and moderate correlation with the SF-36 (r=0.50, p<0.001). It also correlated moderately with PDAI and BPDAI disease severity scores (r=0.47, p<0.001, and r=0.60, p= 0.002). There was no significant difference in proportion of insensitive items between the ABQOL versus DLQI, and ABQOL versus SF-36.

Conclusion

The Malay ABQOL is a valid and reliable tool for assessing QoL in AIBD patients.

Key words: Autoimmune blistering disease, quality of life, Malay, pemphigus, pemphigoid

Introduction

Autoimmune blistering diseases (AIBD) represent a group of rare and chronic condition which causes significant distress to those suffering from it. Clinical subtypes are dependent on the protein sites within the keratinocyte membrane and dermo-epidermal junction to which pathogenic auto-antibodies target. Regardless of subtype, AIBD cause enormous physical and psychological burden.[1] Painful and itchy blisters and erosions are particularly disabling if the mucous membranes are involved. As the skin is also an integral part of the image we project to the

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outside world, disfigurement from blisters, erosions, crusting or post inflammatory hyperpigmentation can lead to low self-esteem and depression.

Quality of life (QoL) assessment tools take into consideration patients' perspectives of their disease and treatment, their perceived need for health care, and their preferences for treatment and outcomes.[2] Being patient centred, aspects of patients' health status that are significant for the patient, but may not correlate with clinical severity can be better identified with the use of QoL assessment tools. In the past, QoL issues amongst patients have frequently been overlooked by clinicians due to various reasons, amongst which include time constrains and difficulty in interpreting as compared to laboratory parameters. However, this had begun to change as doctors and researchers started recognizing QoL as outcome measures in clinical trials.[3] Over the past two decades, multiple attempts of evaluating AIBD's impact on quality of life (QoL) have been conducted in various parts of the world, mostly using generic and skin specific QoL questionnaires. Some of these include The Medical Outcome Study 36-item Short-form Survey (SF-36), Dermatology Life Quality Index (DLQI), Skindex and 12-item General Health Questionnaire (GHQ-12). Although all of these studies consistently reported negative QoL impact, the generic nature of these questionnaires may have limitations in capturing small changes affecting AIBD patients.[4-7] This had led to the formulation of the Autoimmune Bullous Disease Quality of Life (ABQOL) questionnaire by the Australian panel of bullous experts, which is a 17-item questionnaire looking at impact of autoimmune bullous disease on QoL.[8]

There is paucity of Malaysian data regarding AIBD impact on QoL which was partly contributed by the lack of validated AIBD-specific QoL instruments, particularly in the Malay language. Malaysia is a country of multiethnicity, comprising of 60% Malays, 23% Chinese, 7% Indians and 10% others.[9] Proficiency in the Malay language is not only seen in the native Malays, which comprise the majority of Malaysians, but also Malaysians of other races. This is because the Malay language is the main medium of education throughout the entire period (11 years) of primary and secondary education in the country since 1969.[10] As clinical trials of new therapies in AIBDs are occurring and using patient reported outcomes such as DLQI and ABQOL as outcome measures, there is a need for the ABQOL to be validated in Malay to enable Malaysia to be included in these studies. Thus, the purpose of this study was to translate and adapt the ABQOL questionnaire into Malay and evaluate its validity and reliability in the Malaysian context.

Materials and Methods

Patients Selection

This cross-sectional, questionnaire based study was carried out after approval from the Malaysian Research Ethics Committee (NMRR-14-574-20838) was obtained. The inclusion criteria were: patients with histologically confirmed diagnosis of AIBD with self-professed proficiency in Malay language who are at least 18 years old and able to give informed consent. Proficiency in Malay language was confirmed via conversation with a Malay nurse, followed by reading and filling up of the consent form, which was in Malay.

Translation of questionnaire

Permission to translate and use this questionnaire was obtained from the author who developed it (DFM).[8] This questionnaire was forward translated to Malay by a certified translation agency in Malaysia. The Malay questionnaire was then reviewed by a group of doctors who are proficient in the language to ensure cultural relevance. Following that, the forward translated questionnaire was given to a different translation agency which had no access to the original ABQOL to be back-translated. The back-translated version was then reviewed against the original by the original developer of the ABQOL (DFM). Discrepancies found between the forward and backward translations were resolved between the developer of the original ABQOL (DFM), principal investigator (EY), forward translation and back translation agencies.

Study procedures

Medical Information

Medical records of recruited patients were reviewed by two Dermatology consultants (SEC and KET) and one Dermatology trainee (EY) to verify diagnosis of AIBD, duration of disease and treatment regimens. This was then followed by a complete physical examination evaluating severity and stage of AIBD. Severity of AIBD was scored using either the Pemphigus Disease Activity Index (PDAI) or Bullous Pemphigoid Disease Activity Index (BPDAI).[11-12] Disease stage was determined according to the 'Consensus statement on definitions of disease, end points and therapeutic response for pemphigus' and 'Definitions and outcome measures

for bullous pemphigoid'.[13-14]

Questionnaires

Patients recruited were asked to complete 3 patient-administered questionnaires. The questionnaires involved are the validated Malay versions of:

a. Dermatology Life Quality Index (DLQI)[15]
b. The Medical Outcome Study 36-item Short-form Survey (SF-36)[16]
c. Autoimmune Bullous Disease Quality of Life (ABQOL)[9]

Twenty-one out of the 75 patients recruited were required to return to the clinic 10-14 days after completion of the questionnaires for a repeat ABQOL questionnaire.

Reliability

Internal consistency along with construct validity was determined using Cronbach's alpha coefficient. Test-retest reliability evaluated reproducibility of the ABQOL results at different times. This is determined using the intra-class correlation coefficient (ICC), generated by comparing the ABQOL scores at Day 0 and Day 10-14. An interval of 10-14 days was observed before administering the repeat ABQOL to eliminate risk of recall bias.

Validity

Validation of the Malay translation of ABQOL included the assessment of face, content, construct, convergent, and discriminant validity. Face and content validity were established by forward-backward translation of the ABQOL. Convergent validity was determined by comparing the ABQOL scores with the DLQI or SF-36 scores. Discriminant validity was evaluated by comparing the proportions of insensitive items in the ABQOL and DLQI or ABQOL and SF-36. The definition of insensitive items were items with more than 50% of patients responding with an extreme value (ie, a response of never or always), which was an accepted threshold in the literature.[17]

Factor analysis

The dimensionality of the questions in the Malay translation of ABQOL was assessed using exploratory principal components analysis followed by Oblimin rotation.[18] Significance was defined as a loading of more than 0.4. Item complexity occurred if an item loaded less than 0.4 or loaded more than 0.4 on more than 1 factor.[8] In the event where an item loaded significantly on more than 1 factor, the item will be assigned to the factor which best represents it.

Statistical analysis

All statistical analyses were performed using SPSS v19.0 (SPSS, Inc., Chicago, IL) by a biostatistician (PS) and the principal investigator (EY). A p-value of <0.05 was considered statistically significant.

RESULTS

Seventy-five patients with AIBD were recruited from May 2014 to January 2015. Demographic and clinical characteristics of our patients were summarised in Table 2. Figure 1 summarised the responses of AIBD patients to the questions in the Malay ABQOL questionnaire. There was a significant difference between the median ABQOL scores in patients with disease duration less than 6 months and those with disease duration more than 6 months (21.0 versus 10.5, $p=0.012$). A significant difference was also found in the median ABQOL scores between patients aged less than 55 and patients aged 55 years old and above (18.0 versus 9.0, $p<0.001$). Patients of the pemphigus spectrum scored worse than pemphigoid patients (15.5 versus 7.0, $p=0.001$). Chinese patients reported a better QoL compared to Malay and Indian patients. (Chinese versus Malay: 7.5 versus 18.5, $p<0.001$, Chinese versus Indian: 7.5 versus 17.0 $p=0.025$). There was no significant difference in ABQOL scores amongst different genders. (Table 3)

Reliability and validity

There was high level of internal consistency and construct validity of the Malay translation of ABQOL (Cronbach alpha = 0.940). Test-retest reliability showed high level of intraclass correlation (ICC) ($r=0.89$). The Malay ABQOL had high correlation with the DLQI ($r=0.73$. $p<0.001$) and moderate correlation with the SF-36 ($r=0.50$, $p<0.001$). Spearman's correlation revealed the Malay translation of ABQOL correlated moderately with the PDAI ($r=0.47$, $p<0.001$) and BPDAI ($r=0.60$, $p=0.002$) scores. With regards to discriminant validity, insensitive items were found in 10 out of 17 ABQOL, 8 out of 10 DLQI and 17 out of 36 SF-36 items. There were no significant difference in the proportion of these insensitive items between the ABQOL versus DLQI, and ABQOL versus SF-36. Table 3 summarised measures of validity and reliability of the Malay translation of ABQOL.

Factor analysis

The Kaiser-Meyer-Olkin measure of sampling

Table 1. Demographic and clinical characteristics of autoimmune bullous disease patients recruited (n=75)

Variables		Frequency (%)
Age (years) (mean, S.D)		54.7 (±15.6)
Gender		
Male		24 (32.0)
Female		51 (68.0)
Race		
Malay		30 (40.0)
Chinese		30 (40.0)
Indian		14 (18.7)
Others		1 (1.3)
Autoimmune bullous disease (AIBD)		
Pemphigus vulgaris		35 (46.7)
Pemphigus foliaceous		17 (22.7)
Bullous pemphigoid		23 (30.7)
Disease severity		
Pemphigus vulgaris (PDAI score: median, IQR)		17.0 (18.0)
Pemphigus foliaceous (PDAI score: median, IQR)		15.0 (24.5)
Bullous pemphigoid (BPDAI score: median, IQR)		2.0 (17.0)
Distribution of patients in different disease stages with regards to disease duration		
Less than 6 months (n=17)	Baseline	7 (41.2)
	Control of disease activity	4 (23.5)
	Time to disease control	2 (11.8)
	End of consolidation phase	1 (5.9)
	Partial remission on therapy	0 (0)
	Partial remission off therapy	0 (0)
	Flare	3 (17.6)
	Complete remission on therapy	0 (0)
	Complete remission off therapy	0 (0)
More than 6 months (n=58)	Baseline	0 (0)
	Control of disease activity	1 (1.7)
	Time to disease control	1 (1.7)
	End of consolidation phase	38 (65.5)
	Partial remission on therapy	3 (5.2)
	Partial remission off therapy	0 (0)
	Flare	3 (5.2)
	Complete remission on therapy	11 (19.0)
	Complete remission off therapy	1(1.7)

Figure 1. Responses of patients (in percentage) to questions in the Malay ABQOL (n=75)

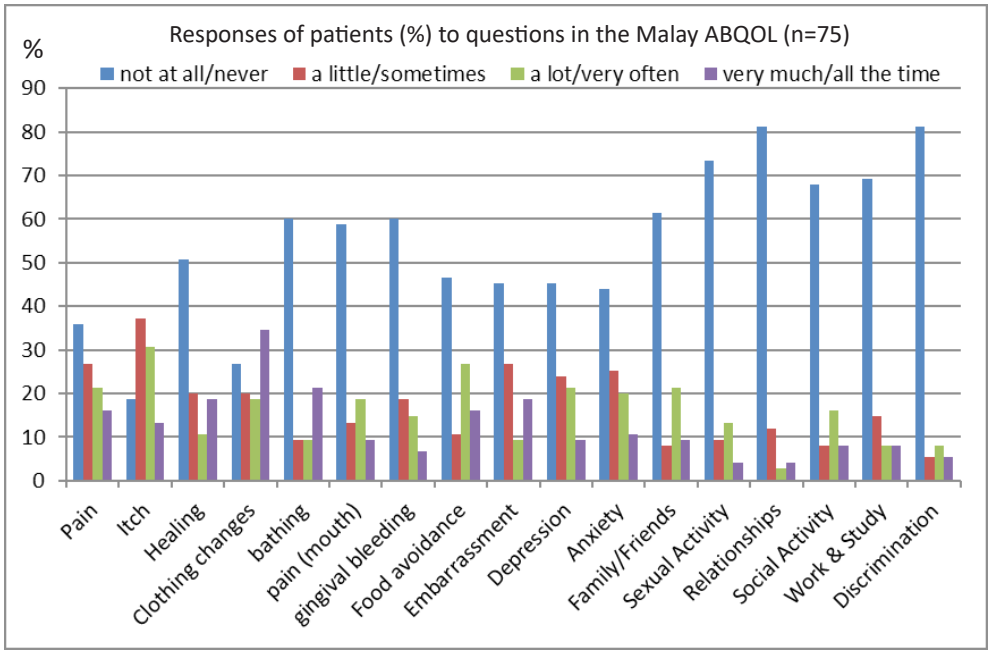


Table 2. Effects of gender, age group, disease duration, autoimmune bullous disease (AIBD) subtypes and treatment grade on ABQOL scores

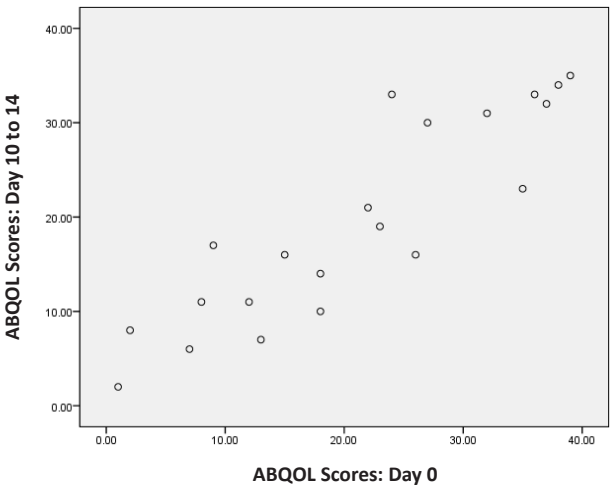
		ABQOL scores (IQR)	p-value
Gender	Male	12.5 (22.0)	0.941
	Female	11.0 (15.0)	
Age	<55	18.0 (17.0)	**p<0.001**
	>55	9.0 (14.0)	
Disease Duration	<6 months	21.0 (26.0)	**p=0.012**
	>6 months	10.5 (14.0)	
AIBD subtype	Pemphigus	15.5 (16.0)	**p=0.001**
	Pemphigoid	7.0 (8.0)	
Ethnic group	Malay	18.5 (15.0)	**p<0.001**
	Chinese	7.5 (10.0)	
	Malay	18.5 (15.0)	p=0.562
	Indian	17.0 (28.0)	
	Chinese	7.5 (10.0)	**p=0.025**
	Indian	17.0 (15.0)	

p-values generated using Mann-Whitney test

Table 3. Validity and reliability of the Malay translation of ABQOL

	Methods	Results
Face and content validity	Forward-backward translation, resolution of discrepancies by author and owner of the original questionnaire	Acceptable
Convergent validity	Correlation with PDAI Correlation with BPDAI Correlation with DLQI Correlation with SF-36	r= 0.47, p<0.001 r= 0.60, p=0.002 r= 0.73, p<0.001 r= -0.50, p<0.001
Discriminant validity (Fisher exact test)	DLQI SF-36	p= 0.758 p= 0.803
Internal consistency	Cronbach's alpha	α= 0.940, p<0.001
Test-retest reliability	ICC	r=0.89

Figure 2. Test-retest reliability of the ABQOL (n=21)



adequacy (0.840) and the Bartlett test of sphericity ($p < 0.001$) suggested that factor analysis of the data was appropriate. Scree plot generated suggested that three factors (symptom, mucosal, and psychosocial) should be retained, representing 57.47% of the cumulative variance. The rotation matrix obtained by the exploratory principal components analysis followed by Direct Oblimin rotation indicated that 11 items loaded on symptom subscale (questions 1, 2, 3, 5, 9, 10, 12, 14, 15, 16 and 17); four items loaded on mucosal subscale (questions 6, 7, 8 and 11); and two items loaded on psychosocial subscale (questions 4 and 13). Of these 17 questions, question 9 (embarrassment) exhibited complexity (symptoms factor loading 0.598 and psychosocial factor loading 0.420). This was eventually assigned to psychosocial factor as we felt it represented embarrassment more accurately. The three dimensions and their representing items were summarised in Table 4.

Discussion

Our study confirmed the Malay translation of the ABQOL questionnaire was a valid and reliable tool in capturing the impact of autoimmune bullous disease (AIBD) on quality of life. In the Malaysian context, a very high level of internal consistency was found (Cronbach's alpha 0.94). This is in keeping with the results of the original authors in Australia (Cronbach's alpha 0.84) and other similar studies in various parts of the world such as the North America (Cronbach's alpha 0.90), China (Cronbach's alpha 0.88) and Poland (Cronbach's alpha 0.95).[8,19-21] There was high level of reproducibility of questionnaire results under similar conditions, as evidenced by intraclass coefficient (ICC) of 0.89. Again, this is consistent with studies mentioned earlier.[8,19-21] Like the Chinese group, we found the ABQOL correlated highly with the DLQI but moderately with the SF-36.[20] Studies done in Australia, North America and Poland showed the English and Polish ABQOL had a moderate correlation with the DLQI and SF-36.[8,19,21] The Greek ABQOL had good correlation with the DLQI, but no comparison was made with the SF-36.[22]

All of our subjects were patients of pemphigus vulgaris, pemphigus foliaceous and bullous pemphigoid. This reflected the majority of AIBDs seen in our practice. In both the pemphigus and pemphigoid group of patients, the ABQOL correlated moderately with disease severity (PDAI, r=0.47, p<0.001, BPDAI, r=0.60, p<0.002). This phenomenon is also seen amongst the Greek (PDAI, r= 0.56, BPDAI, r= 0.55) and Australian (PDAI,

Table 4. Principal components and factor analysis of Malay translation of ABQOL

No.	Items	Component		
		Symptoms	Mucosal	Psychosocial
1.	Pain	**.734**	.081	-.010
2.	Itch	**.428**	.352	-.031
3.	Healing	**.619**	.143	-.150
4.	Clothing changes	.013	.198	**.716**
5.	Bathing/Showering	**.794**	-.247	.068
6.	Pain (mouth)	.096	**.733**	.192
7.	Gingival bleeding	-.108	**.847**	.055
8.	Food avoidance	.261	**.565**	.078
9.	Embarrassment[b]	.598	-.168	**.420**
10.	Depression	**.693**	.217	-.003
11.	Anxiety	.346	**.454**	.323
12.	Family/friends	**.558**	.137	.239
13.	Sexual activity	-.007	.083	**.800**
14.	Relationships	**.665**	.209	-.266
15.	Social life	**.761**	-.241	.109
16.	Work & Study	**.689**	.201	.012
17.	Discrimination	**.585**	-.035	.227

[a]*Bold items load on assigned factor. Extraction method was principal components analysis; rotation method was Oblimin with Kaiser normalization.*
[b]*Indicates finding of item complexity.*

r= 0.42, ABSIS, r= 0.48) patients.[7,22] The Polish group however, found poor correlation between the ABQOL with the PDAI (r= 0.38) and BPDAI scores (r=0.40).[21] All of these results suggested that the degree to which patient's QoL was affected may not be dependent on clinical severity alone. Other factors contribute as well, including patient demographic characteristics, the natural history and site of skin disorders, and time to diagnosis.[5]

Our study showed that disease duration of less than 6 months had a significantly higher impact on patients' ABQOL scores. This could be accounted by the fact that more than half (58.8%) of patients with disease duration less than 6 months had clinical stages of baseline and flare, where clinical states were expected to be most severe. In comparison, amongst patients with disease duration more than 6 months, only 5.2% were of these stages. Another explanation is that patients may not have a sufficient understanding of the clinical implications of the AIBDs when they were first diagnosed with the conditions, leading to poorer coping and adaptation abilities to their condition.[5] Patients of the pemphigus spectrum were also found to have poorer health status compared to the pemphigoid group. This could be because bullous pemphigoid is generally considered a less severe disease compared to pemphigus vulgaris. Moreover, pemphigus tends to affect a younger group of patients who are employed and more socially active.[23] Heelan et al proved that AIBDs affected work performance, especially in patients with severe disease. This was evidenced by the high Work Productivity and Activity Impairment Questionnaire-Specific Health Problems (WPAIQ-SHP) scores, which took into consideration work missed, impairment while working, total work productivity impairment, and total activity impairment. The same study also reported that patients with worse DLQI scores had higher overall work impairment and activity impairment, reiterating the fact that disturbance in work performance negatively affects QoL.[24] Even though there was no significant difference in disease severity amongst the three main races, Chinese patients scored significantly lower compared to Malay and Indian patients. The Chinese culture promotes endurance, acceptance and adaptation to one's fate, including presence of illnesses. Hence, the lower life expectations may have contributed to the Chinese rating their health status more favourably.[25]

The Australian group who developed the original ABQOL questionnaire found it to be more sensitive than the DLQI and SF-36 in capturing the effects on QoL caused by changes in the clinical status.[8] Our data however showed that all 3 tools are good in measuring changes in QoL with disease stage. We found 10 insensitive items in the Malay version of ABQOL, which was 3 items more compared to the original version of ABQOL. Of all the insensitive items on the Malay ABQOL, questions pertaining to sexual activity, interpersonal relationships and workplace or school discrimination had the highest percentage of respondents with scores of zero (73.3%, 81.3% and 81.3% respectively). We felt the Asian culture may have played a role here. Sex and sexuality is not comfortably discussed amongst many Asians. This was confirmed by a study conducted across China, Taiwan, South Korea, Japan, Thailand, Singapore, Malaysia, Indonesia and the Philippines looking at sexual behaviour, dysfunction and help-seeking patterns amongst an urban Asian population.[26] Besides, many Asians emphasises the importance of family harmony and interpersonal relationships, and the high value of education and hard work. Saving face – the ability to preserve the public appearance of the patient and family for the sake of community propriety is extremely important to most Asian groups.[27] This may have accounted for the low scores of these questions.

Our study was limited by overrepresentation of

AIBD by pemphigus vulgaris, pemphigus foliaceous and bullous pemphigoid patients. Hence suitability of this questionnaire for patients of other AIBDs such as epidermolysis bullosa acquisita (EBA), paraneoplastic pemphigus, cicatricial pemphigoid, dermatitis herpetiformis (DH) and linear IgA bullous dermatoses (LABD) is unknown.

Conclusion

The Malay version of ABQOL was a valid and reliable tool that will enable clinicians gain better insight into our Malaysian patients' experience in AIBD. In addition, this could serve as a tool for disease monitoring. The applicability of this questionnaire may also be extended to the Malay-speaking patients within the region, such as in Singapore, Brunei and Indonesia. We believe a better understanding of the impact of AIBD on patients' QoL will enhance patients' care and satisfaction.

Declaration of Conflict of Interest

The authors have no conflict of interest to declare.

Footnote

The Malay version of the ABQOL is included at the end of this article (Appendix 1). The license for this Malay ABQOL belongs to the Australasian Blistering Diseases Foundation.

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Appendix 1: Malay ABQOL Questionnaire

Soal Selidik ABQOL

Nama: _____ Tarikh:_____

Tarikh Lahir: _____ Jantina: L/P Nombor untuk Dihubungi:_____

Jenis Penyakit:
- ☐ Pemphigus Vulgaris
- ☐ Bullous Pemphigoid
- ☐ Pemphigus Foliaceous
- ☐ Epidermolysis Bullosa Acquisita
- ☐ Linear IgA Bullous Dermatose
- ☐ Mucous Membrane Pemphigoid
- ☐ Lain-lain.....

Soalan-soalan berikut bertanyakan tentang cara-cara di mana *penyakit kulit melepuh* mempengaruhi kualiti kehidupan anda.

Sila buat pilihan dari ruang sebelah kanan yang paling berkait dengan perasaan anda *dalam tempoh minggu lepas*.

Sila nyatakan masa kaji selidik bermula: _____ PG/PTG

1. Berhubung penyakit kulit melepuh anda, adakah kulit anda melecet, rasa mencucuk atau sakit dalam apa jua cara?	○ Setiap masa ○ Kadang-kadang ○ Jarang-jarang ○ Tidak pernah
2. Berhubung penyakit kulit melepuh anda, adakah kulit anda gatal?	○ Setiap masa ○ Kadang-kadang ○ Jarang-jarang ○ Tidak pernah
3. Adakah anda perlu menukar pakaian disebabkan oleh penyakit kulit melepuh anda?	○ Saya perlu sangat berhati-hati dengan setakat mana ketatnya pakaian saya dan jenis fabrik pakaian tersebut – saya terpaksa menukar pakaian yang saya pakai setiap masa ○ Saya terpaksa menukar kebanyakan pakaian yang saya pakai ○ Saya terpaksa menukar sebahagian pakaian yang saya pakai ○ Saya tidak pernah perlu menukar pakaian yang saya pakai
4. Adakah anda perasan kulit anda sembuh secara perlahan-lahan?	○ Saya perasan tentangnya setiap masa ○ Saya perasan tentangnya kadang-kadang ○ Saya perasan tentangnya jarang-jarang ○ Saya tidak pernah mengalami masalah ini

5. Adakah penyakit kulit melepuh anda menyukarkan anda untuk mandi?	○ Setiap masa ○ Kadang-kadang ○ Jarang-jarang ○ Tidak pernah
6. Berhubung penyakit kulit melepuh anda, adakah mulut anda mempunyai luka yang menyakitkan?	○ Setiap masa ○ Kadang-kadang ○ Jarang-jarang ○ Tidak pernah
7. Berhubung penyakit kulit melepuh anda, adakah gusi anda berdarah dengan mudah?	○ Setiap masa ○ Kadang-kadang ○ Jarang-jarang ○ Tidak pernah
8. Adakah penyakit kulit melepuh anda menghalang anda daripada menikmati makanan atau minuman kegemaran anda?	○ Saya tidak boleh lagi makan apa-apa makanan yang saya gemari ○ Saya boleh makan sebahagian makanan yang saya gemari ○ Saya boleh makan kebanyakan makanan yang saya gemari ○ Saya boleh makan apa-apa makanan yang saya gemari
9. Adakah anda rasa malu tentang penampilan anda ekoran daripada penyakit kulit melepuh anda?	○ Setiap masa ○ Kadang-kadang ○ Jarang-jarang ○ Tidak pernah
10. Adakah anda rasa murung atau marah disebabkan oleh penyakit kulit melepuh anda?	○ Setiap masa ○ Kadang-kadang ○ Jarang-jarang ○ Tidak pernah

11. Adakah anda rasa bimbang atau tidak boleh bertenang ekoran daripada penyakit kulit melepuh anda?	o Setiap masa o Kadang-kadang o Jarang-jarang o Tidak pernah
12. Adakah anda bimbang yang rakan dan keluarga anda merasakan keadaan kulit melepuh anda sesuatu yang membebankan?	o Setiap masa o Kadang-kadang o Jarang-jarang o Tidak pernah
13. Adakah penyakit kulit melepuh anda menyebabkan sebarang masalah hubungan seks?	o Setiap masa o Kadang-kadang o Jarang-jarang o Tidak pernah
14. Adakah penyakit kulit melepuh anda menjejaskan hubungan dengan rakan atau orang tersayang?	o Saya perlu menamatkan hubungan kerana penyakit saya ATAU saya tidak boleh menjalinkan hubungan kerana penyakit saya o Hubungan amat sukar dijalinkan o Hubungan sedikit sukar dijalinkan o Ia tidak menjejaskan hubungan saya
15. Adakah penyakit kulit melepuh anda menjejaskan kehidupan sosial anda?	o Saya tidak boleh lagi keluar untuk bersosial o Saya hanya boleh menghadiri sebahagian acara sosial o Saya boleh menghadiri kebanyakan acara sosial o Kehidupan sosial saya tidak terjejas
16. Adakah penyakit kulit melepuh anda menjejaskan kerja atau pengajian anda?	o Ya, saya tidak boleh lagi bekerja atau belajar o Ya, saya mendapati sukar untuk bekerja atau belajar o Ya, saya mendapati sedikit sukar untuk bekerja atau belajar berbanding sebelumnya o Tidak, saya tidak terjejas atau **ATAU** Tidak Berkenaan

17. Adakah majikan anda mendiskriminasi anda kerana penyakit kulit melepuh anda?	○ Saya tidak boleh mendapatkan pekerjaan disebabkan oleh penyakit kulit melepuh saya ○ Saya terpaksa bertukar pekerjaan disebabkan oleh penyakit kulit melepuh saya ○ Saya tidak kehilangan pekerjaan tetapi ia lebih sukar berbanding sebelumnya ○ Majikan saya memahami sepenuhnya **ATAU** Tidak Berkenaan

Sila nyatakan masa kaji selidik ditamatkan:_____ PG/PTG

Terima kasih atas kesudian anda meluangkan masa untuk melengkapkan soal selidik ini

Footnote: The license for this Malay ABQOL belongs to the Australasian Blistering Diseases Foundation.