

Dermatologists' Practices and Attitudes towards the Management of Moderate to Severe Psoriasis in Riyadh City, Saudi Arabia

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Abstract: Objectives In the past ten years, psoriasis management has changed dramatically. The recognition of co-morbidities by dermatologists is a key to successful patient outcome. We aimed to assess the dermatologists' practices and attitudes towards the management of psoriasis and the extent to which they screen their patients for medical and psychological co-morbidities in Riyadh, Saudi Arabia. **Materials and methods** One hundred seventy five dermatologists in the private sector in Riyadh city were surveyed in the period from January, 1 to April, 30, 2012 for their daily practices and attitudes towards the management of patients with moderate to severe psoriasis. They were also surveyed for screening of psoriasis patients for cardiovascular disease (CVD) risk factors, and their practices and attitudes towards systemic therapies of psoriasis. **Results** Among 90 dermatologists who responded to the questionnaire, 32 (35.6%) used a validated clinical severity score for assessment of the severity of psoriasis, and 6 (6.7%) used a validated scale for the assessment of health-related quality of life (HR-QoL). Only 32 dermatologists (35.6%) screened for diabetes mellitus, 28 (31.1%) screened for obesity, 39 (43.3%) screened for hypertension, and 30 (33.3%) screened for dyslipidemia. **Conclusion** Most dermatologists did not routinely use a validated score for assessment of the severity of psoriasis or HR-QoL. Most of them also did not screen psoriasis patients for CVD risk factors. Educating the dermatologists regarding the importance of accurate assessment of psoriasis severity and the recognition of co-morbidities is needed.

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Key words: dermatologists' practices, co-morbidities, screening attitude

1.Introduction

Psoriasis is a chronic, inflammatory disease of the skin and joints affecting 2% to 4% of the general population.^{1, 2} The perception and understanding of psoriasis have changed in the past 10 years as a result of significant research which enhances our knowledge of the pathological processes involved. Psoriasis is now considered as a systemic, immune-mediated disorder driven by inflammatory processes and is also associated with a range of co-morbidities that include metabolic diseases, such as diabetes and CVD, and psychological disorders.³⁻⁶ These co-morbidities are likely to influence patients' health and quality of life (QoL), and contribute to the 3- to 4-year reduction in life expectancy in patients of severe psoriasis.⁷

Several studies showed that patients with psoriasis appear to be at increased risk for established CVD risk factors and adverse CV outcomes.⁸⁻¹⁸ Patients with psoriasis appear to be more likely to develop hypertension, diabetes mellitus, obesity, and dyslipidemia compared with the general population.¹⁹⁻²² Young adults with severe psoriasis are three times more likely to experience myocardial infarction (MI) than healthy adults.¹⁴ Coronary plaques are twice as common in psoriatic patients than in control subjects,²³ and the risk of fatal MI or stroke is also

increased in patients who have been hospitalized for psoriasis.²⁴ The presence of psoriasis as an independent risk factor for the development of atherosclerosis and associated CVD, when controlling for different variables, has been noted in various studies.^{12, 23, 25-27} However, not all studies found such a link between psoriasis and CVD.^{28, 29}

Psoriasis typically presents in patients at a young age and dermatologists are therefore well placed to detect the presence of any potential metabolic or CVD risks and control these as appropriate. The recognition of co-morbidities by dermatologists in the treatment of psoriasis is a key to a successful patient outcome. In 2008, the National Psoriasis Foundation (NPF) and the American Journal of Cardiology (AJC) each released screening guidelines and recommendations for management of CVD risk factors in patients with psoriasis.^{30, 31} In 2010, the 'Rencontres d'Experts du Psoriasis' (psoriasis experts' meeting) developed evidence-based recommendations to assess psoriasis severity and they recommended screening of CVD risk factors in patients with psoriasis.³²

In Saudi Arabia, there are no national guidelines for assessment of psoriasis severity or screening of CVD risk factors in patients with psoriasis. It is unknown whether dermatologists in Riyadh

implement the published guidelines for management of psoriasis in their daily practice or not. So, this study was conducted to assess the dermatologists' practices and attitudes towards the management of moderate to severe psoriasis, the extent to which they screen their patients for medical and psychological co-morbidities, and their practices and attitudes towards systemic therapies of psoriasis in Riyadh city, Saudi Arabia.

2. Materials and methods

Study setting

We conducted a survey of 175 dermatologists working at private practices in Riyadh city, Saudi Arabia, in the period from January, 1 to April, 30, 2012.

Data collection

A questionnaire was used for data collection, including five main parts: 1) demographic data and characteristics of the work place, 2) dermatologists' practices and attitudes towards assessment of psoriasis severity, 3) dermatologists' practices and attitudes towards assessment of the burden of psoriasis on HR-QoL, 4) dermatologists' practices and attitudes towards screening of CVD risk factors and 5) dermatologists' practices and attitudes towards systemic therapies of moderate to severe psoriasis.

The questionnaire and self-addressed return envelope were sent by mail to the 175 dermatologists on January 1, 2012. Informed consent was obtained using the cover letter enclosed with the questionnaire. On March 1, 2012, the questionnaire was resent to non-respondents. All responses received before April 30, 2012 had been included in the results.

Ascertainment of outcomes

The primary outcome of the study was to ascertain whether dermatologists at the private practices in Riyadh city were using validated scales for assessment of psoriasis severity and HR-QoL and whether they were screening patients with moderate to severe psoriasis for CVD risk factors such as type 2 diabetes mellitus, obesity, hypertension, and dyslipidemia.

Secondary outcome of the study was to know the dermatologists' practices and attitudes towards systemic therapies for moderate to severe psoriasis and the factors which can affect their choice of a certain therapy.

Statistical analysis

Data were analyzed using the Statistical Package for Social Science version 17.0 software (SPSS Inc., Chicago, Illinois, USA).³³ Frequency tables were produced and students t test was used for test of difference for quantitative variables, while Chi square test was used for categorical variables. Pearson correlation was carried out to study the correlation between the studied variables.

3. Results

From 175 questionnaires that were sent to dermatologists working at the private practices in Riyadh city, Saudi Arabia, 90 dermatologists responded to the questionnaire which corresponded to a response rate of 51.4%. Among the 90 dermatologist responders, 39 (43.3%) were consultants and 51 (56.7%) specialists. There was no major difference regarding the duration of practicing dermatology between consultants and specialists. About half of the dermatologists (48.9%) were working in hospitals, and consultants were working mainly at big size practices, while specialists tended to work in solo or small size practices. There were no significant differences between consultants and specialists regarding the total number of patients or the number of psoriasis patients seen by them. Only 66 (73.3%) of dermatologists reported availability of phototherapy center in their practices, while 34 (37.8%) of them reported availability of infusion center (Table 1).

Assessment of the clinical severity of psoriasis

We assessed dermatologists' practices and attitudes towards the assessment of psoriasis severity. Overall, 32 (35.6%) dermatologists used a validated score for assessment of psoriasis severity. All of them used the Psoriasis Area and Severity Index (PASI). We found that 40 (44.4%) dermatologists were aware of this recommendation but they did not implement in their practices and 18 (20%) were not aware. Consultants were 1.52 times more likely to use clinical severity scores than specialists (95% confidence interval 0.58-3.98, $P = 0.34$), and they were more aware of this recommendation (Figure 1).

We also assessed the dermatologists' practices and attitudes towards the evaluation of symptoms associated with psoriasis and it was found that the most frequently assessed symptoms were desquamation, pruritus and functional disability. Overall 50 (55.6%), 22 (24.4%), 32 (35.6%), 37 (41.1%), 57 (63.3%), 30 (33.3%), and 44 (48.9%) dermatologists claimed that they evaluated pruritus, cutaneous pain, burning sensation, bleeding, desquamation, sexual life impairment and functional disability in psoriasis patients respectively (Figure 2). Consultants were 3.01 times more likely to evaluate cutaneous pain than specialists (95% confidence interval 1.00-9.23, $P = 0.02$). There was significant difference between consultants and specialists only regarding evaluation of burning sensation ($P = 0.021$).

Assessment of health-related quality of life

Regarding dermatologists' practices and attitudes towards the use of validated scale for assessment of HR-QoL in patients with moderate to severe psoriasis, we found that 29 (74.4%) consultants were aware of

the need to assess QoL but they did not implement in their practices, while 30 (58.8%) specialists were aware but they did not implement. Overall, only 6 dermatologists (6.7%) used a validated scale for assessment of QoL (Figure 3); 5 dermatologists used Dermatology Life Quality Index (DLQI) and 1 used Skindex 16.

We found that 30 (33.3%), 28 (31.1%), 23 (25.6%), 26 (28.9%), 18 (20.0%), and 47 (52.2%) dermatologists questioned their psoriasis patients about the effect of psoriasis on their mood, sleep, financial effect, family effect, fatigue, and acceptance of treatment respectively. Consultants were slightly more likely to question about mood and fatigue while they were less likely to question about sleep, financial effect, family effect, and acceptance of treatment (Figure 4). Overall, 13 (14.4%), 16 (17.8%), 16 (17.8%), 16 (17.8%), 31 (34.4%), and 6 (6.7%) dermatologists were not aware of the need to question psoriasis patient about effect on mood, sleep, financial effect, family effect, fatigue and acceptance of treatment respectively.

Screening of cardiovascular disease risk factors

We assessed the dermatologists' practices and attitudes towards screening of psoriasis patients for CVD risk factors including diabetes mellitus, obesity, hypertension and dyslipidemia. Overall, 32 (35.6%) dermatologists screened for diabetes mellitus, 21 (23.3%) were aware that they should screen psoriasis patients for diabetes mellitus but they did not implement in their practice, and 37 (41.1%) were not aware (Figure 5). Consultants were 8.6 times more likely to screen for diabetes mellitus than specialists (95% confidence interval= 2.89-26.5, $p=0.000006$). As regard screening for obesity, 28 (31.1%) dermatologists screened for obesity, 38 (42.2%) were aware but they did not implement in their practices and 24 (26.7%) were not aware. Consultants were 2.26 times more likely to screen for obesity than specialists (95% confidence interval= 0.83-6.21, $p=0.075$) (Figure 5).

We found that 39 (43.3%) dermatologists screened for hypertension, 29 (32.2%) were aware that they should screen for hypertension but they did not implement in their practices and 22 (24.4%) were not aware. Consultants were 1.77 times more likely to screen for hypertension than specialists (95% confidence interval=0.70-4.52, $p=0.18$) (Figure 5). There was statistically significant correlation between the number of psoriasis patients seen by the dermatologist and the screening for hypertension ($r=.228$, $p=0.032$) (Table 2).

Regarding screening for dyslipidemia, it was found that 30 (33.3%) dermatologists screened for dyslipidemia, 25 (27.8%) were aware that they should screen for dyslipidemia but they did not implement in their practices and 35 (38.9%) were not aware. Consultants were 4.32 times more likely to screen for dyslipidemia than specialists (95% confidence interval= 1.55-12.29, $p=0.0015$) (Figure 5). There was statistically significant correlation between the number of psoriasis patients seen by the dermatologist and the screening for dyslipidemia ($r=.320$, $p=0.002$).

We also assessed dermatologists' practices and attitudes towards screening of psoriasis patients for the risk of psoriatic arthritis. Overall, 44 (48.9%) dermatologists screened their patients for arthritis, 40 (44.4%) were aware but they did not implement in their practices, and only 6 (6.7%) dermatologists were not aware. Consultants were 3.67 times more likely to screen for arthritis than specialists (95% confidence interval=1.4-9.77, $p=0.0031$).

Practices and attitudes towards systemic therapies

In this study, we tried to assess the dermatologists' practices and attitudes towards systemic therapies for moderate to severe psoriasis in Riyadh. We found that the most important factors which might affect the selection of systemic therapy were efficacy and safety, as 86 (95.6%) dermatologists saw that efficacy and safety of systemic therapy were either extremely important or very important. Regarding personal experience, 46 (51.1%) dermatologists mentioned that it was extremely important or very important factor. Overall, 45 (50.0%) dermatologists claimed that the cost to the patient was extremely important or very important factor in the selection of a systemic therapy. Ease for obtaining approval was extremely important or very important factor in the opinion of 44 (48.9%) dermatologists. As regard the ease of administration of the systemic therapy, 57 (63.3%) dermatologists claimed that it was extremely important or very important (Table 3).

Overall the most frequently prescribed therapies for moderate to severe psoriasis by dermatologists working at the private practices in Riyadh were narrow-band UVB and methotrexate which were prescribed by 52 (57.78%) and 46 (51.1%) dermatologists respectively. Among biologic therapies, adalimumab and etanercept were the most frequently prescribed biologic as they were prescribed by 10 (11.1%) and 8 (8.89%) dermatologists respectively.

Table (1): Socio-demographic and work characteristics of dermatologists

	Consultants 39(43.3%)	Specialists 51(56.7%)	Total 90	P value
Gender				
Males	33 (40.7%)	48 (59.3%)	81(90.0%)	>0.05
females	6 (66.7%)	3 (33.3%)	9(10%)	
Duration of practice (years)	18.7±6.4	20.6±8.4		>0.05
Type of practice				0.005
Polyclinic	9 (23.7%) (23.1%)	29 (76.3%) (56.9%)	38 (42.2%)	
Hospital	26 (59.1%) (66.7%)	18(40.9%) (35.3%)	44 (48.9%)	
Dermatology center	4 (50%) (10.3%)	4(50%) (7.8%)	8 (8.9%)	
Size of practice				0.006
Solo	11(34.4%) (28.2%)	21 (65.6%) (41.2%)	32 (35.6%)	
<5 dermatologists	8(28.6%) (20.5%)	20 (71.4%) (39.2%)	28 (31.1%)	
>=5dermatologists	20 (66.7%) (51.3%)	10 (33.3%) (19.6%)	30 (33.3%)	
Number of pts per month	474.9±315.2	493.7±325.2		>0.05
Number of psoriasis pts in past 3 months	42.36±38.28	36.0±33.78		>0.05
Number of moderate to severe Psoriasis pts.	13.44±14.28	11.53±11.06		>0.05
Infusion center availability	24 (70.6%) (61.5%)	10 (29.4%) (19.60%)	34 (37.8%)	0.00004
Phototherapy availability	30 (45.5%) (76.9%)	36 (54.5%) (70.6%)	66 (73.3%)	>0.05

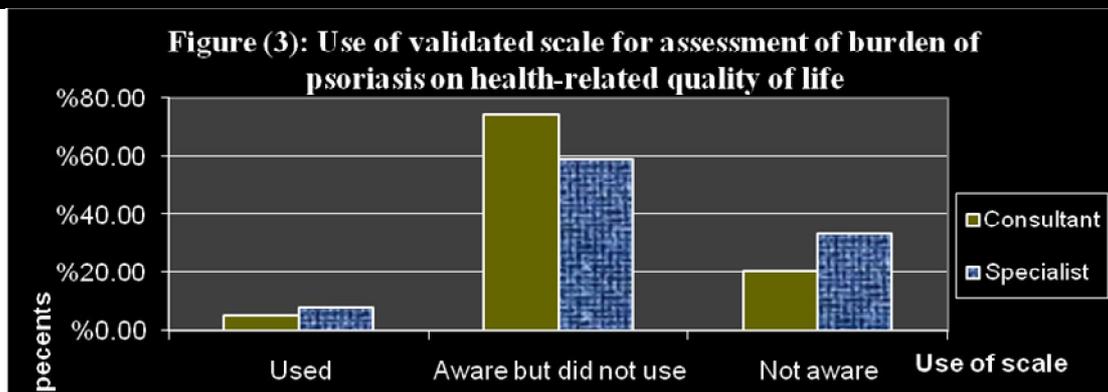
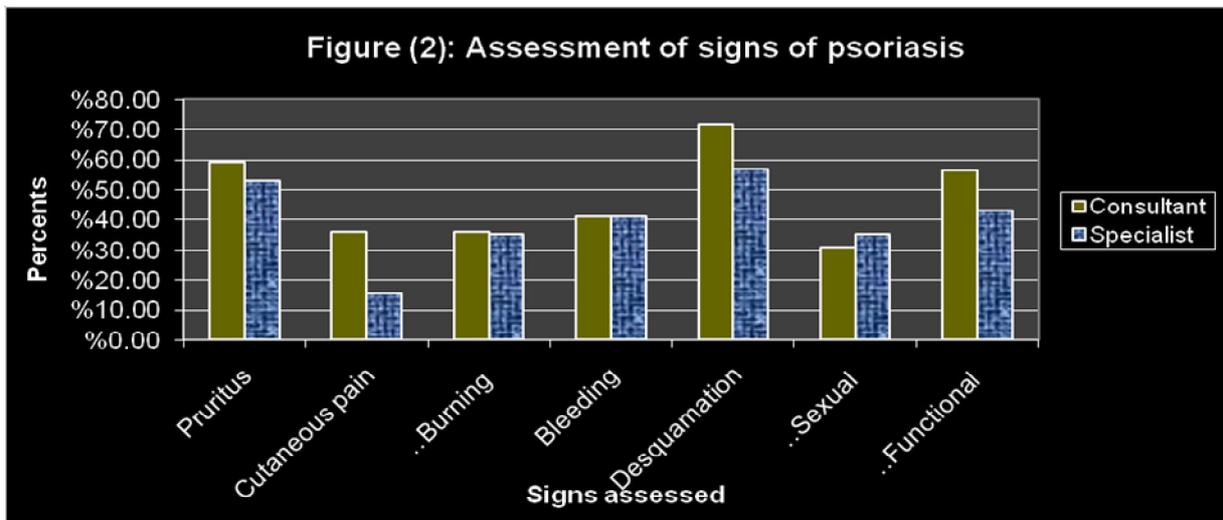
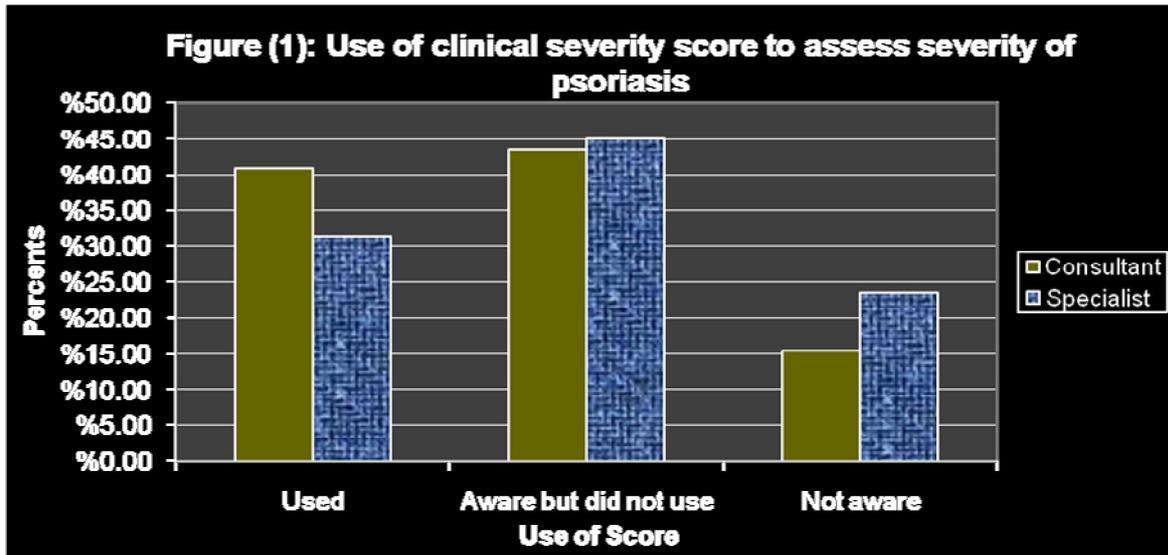
Table (2): Correlation between number of psoriasis patients seen by dermatologists and their practices in management.

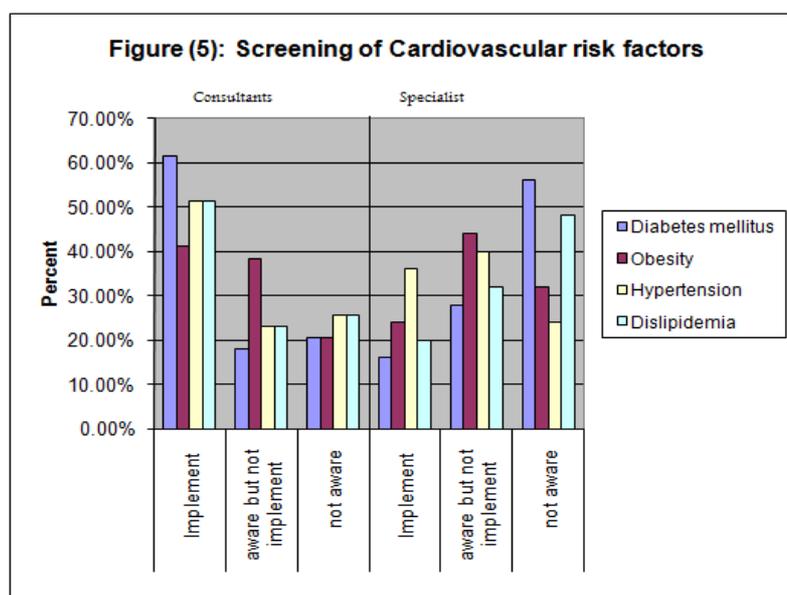
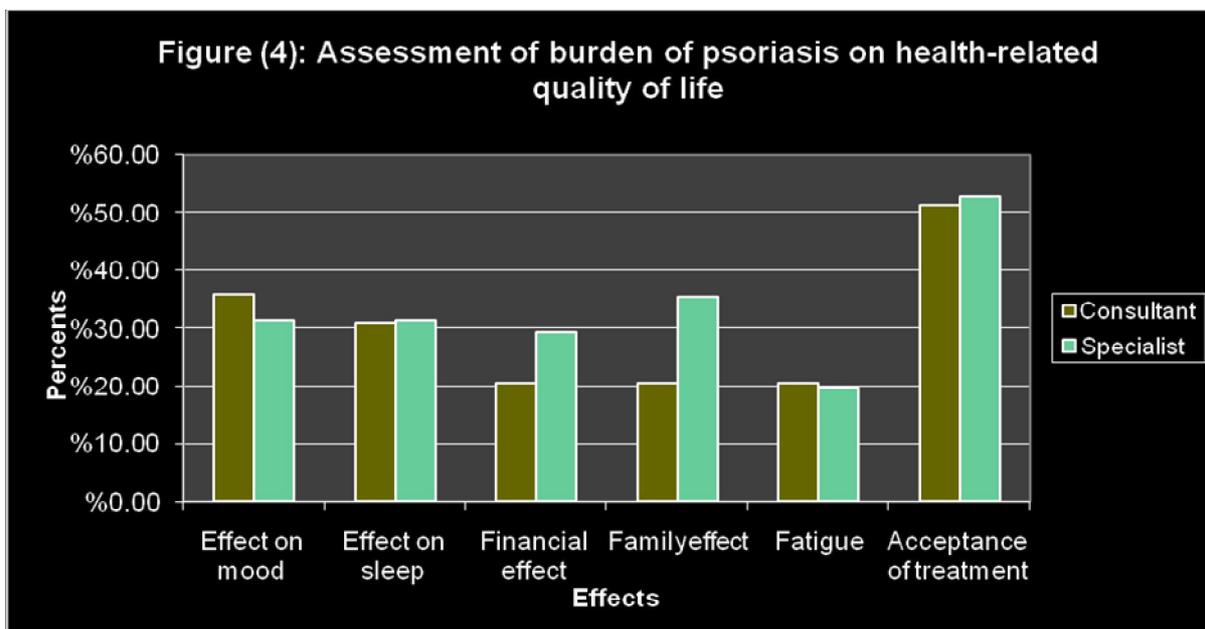
		Assessment of severity of psoriasis	Assessment of QOL	Screening for diabetes	Screening for obesity	Screening for hypertension	Screening for dyslipidemia	Screening for arthritis
Number of psoriasis patients	Pearson correlation coefficient	.135	.101	.107	.042	.228	.320	.047
	P value	0.20	0.345	0.318	0.69	0.032*	0.002*	0.663

* Statistically significant correlation

Table (3): Importance of factors affecting Selection of Systemic Therapies for Psoriasis

	Extremely important	Very important	Moderately important	Somewhat important	Not important
Efficacy	50(55.6%)	36(40.0%)	4(4.4%)	0/0	0/0
Safety	49(54.4%)	37(41.1%)	4(4.4%)	0/0	0/0
Personal experience	20(22.2%)	26(28.9%)	40(44.4%)	2(2.2%)	2(2.2%)
Cost to patients	20(22.2%)	25(27.8%)	37(41.1%)	6(6.7%)	2(2.2%)
Ease for Obtaining approval	23(25.6%)	21(23.3%)	30(33.3%)	8(8.9%)	8(8.9%)
Ease of administration	22(24.4%)	35(38.9%)	26(28.9%)	2(2.2%)	5(5.5%)





4. Discussion

The perceptions and understanding of psoriasis are now changing from that of a skin manifestation with the occasional co-morbid condition to a complex, systemic disease. The complex interplay between psoriasis, obesity and associated cardiovascular morbidities has important implications for treating psoriasis and optimizing patient outcomes.³⁵ So,

psoriasis evaluation is a complex, multidimensional approach, the objective of which is to capture the severity, impact, and co-morbidities associated with psoriasis in the individual patient. Evidence-based recommendations have been increasingly applied in everyday clinical life to help practitioners in clinical decision making. In 2010, the ‘Rencontres d’Experts du Psoriasis’ (psoriasis experts’ meeting) formulated

evidence-based recommendations for baseline evaluation of psoriasis including lesions severity, HR-QoL and co-morbidities which are applicable in everyday clinical practice.³²

Our study showed that only about one third of dermatologists (35.6%) used a validated score for assessment of psoriasis severity. All of them claimed that they used the PASI. Consultants were more likely to use clinical severity scores than specialists. In Paul et al. study, 52% of dermatologists use the PASI in their everyday clinical practice.³² A wide variety of scoring systems have been proposed to assess severity of psoriasis.³⁶ Among severity scores, the PASI has a long history of use and is widely accepted as an outcome measure in clinical research and by health authorities for evaluation of new compounds.³⁷ However, no information on the acceptability of the PASI has been found in literature. The present study also showed that although 44.4% of the dermatologists were aware of the need for using a validated score for assessment of psoriasis severity, they did not implement in their everyday practice. This result may reflect the unacceptability of validated scores by almost half of the dermatologists working at private practices in Riyadh.

The symptoms associated with psoriasis like pruritus, cutaneous pain, burning sensation, bleeding, desquamation, sexual life impairment, and functional disability secondary to specific localization of skin lesions are not evaluated by most severity scores and it was recommended to be evaluated.³² In our study, we assessed the dermatologists' practices and attitudes toward each symptom and we found that 63.3%, 55.8%, and 48.9% of them evaluated desquamation, pruritus, and functional disability respectively, while, 52.1% of the dermatologists who participated in Paul et al. study claimed to already implement this recommendation in their practice.³²

Our results showed that most of the dermatologists did not use a validated scale for assessment of QoL as only 6.7% of them implemented this in their practice. On the other hand, more dermatologists in our study questioned their patients about effect on mood, sleep, financial effect, family effect, and acceptance of treatment. There is great discrepancy between our results and the results of Paul et al.,³² which showed that 45.1% of dermatologists use the DLQI in everyday clinical practice. We also found that although 65.6% of the dermatologists were aware of the use of a validated scale for assessment of QoL, they did not implement in everyday practice. HR-QoL outcomes is relevant in psoriasis for therapeutic decision-making, in particular for systemic therapies.³⁸⁻⁴⁰ Clinical assessments alone, are not sufficient and therefore QoL questionnaires are increasingly part of clinical research and routine

clinical practice.⁴¹ Numerous scales are used in the literature to assess HR-QoL in psoriasis.⁴¹ This limited use of QoL questionnaires in spite of high awareness rate can be explained by unacceptability of these questionnaires or because the dermatologists in the private practices may be not convinced by their importance.

In our study most of dermatologists did not have the practice of screening psoriasis patients for CVD risk factors. On the other hand, it is apparent that consultants were more likely to screen psoriasis patients for CVD risk factors as compared to specialists. In our study, dermatologists are less likely to screen for diabetes mellitus and dyslipidemia when compared with the dermatologists who participated Paul et al. study³² (35.6% vs. 51%, and 33.3% vs. 44% respectively). On the other hand the dermatologists in this study were more likely to screen for obesity (31.1% vs. 17.3%). In both studies the dermatologists have a comparable rate of screening for hypertension (43.3% in our study vs. 44% for Paul et al.,³² study). In a study conducted by Parsi et al.,³⁴ among primary care physicians (PCP) and cardiologists, it was found that 43% screened for hypertension, 11% screened for dyslipidemia, 30% screened for obesity, and 27% screened for diabetes. In general, although most of dermatologists do not have the practice of screening psoriasis patients for CVD risk factors, they are more likely to screen for CVD risk factors than PCP and cardiologists. It is possible that dermatologists are more aware of increased risk for established CVD and adverse CV outcomes in psoriasis patients than PCP and cardiologists. Hypertension was the most frequently screened CVD risk factors in all studies as it is a part of routine examination. We also found that 48.9% of the dermatologists screened the patients for the risk of arthritis compared to 66.0% in the study of Paul et al.,³² Consultants were more likely to screen their patients for arthritis than specialists.

Our study showed that the most frequently prescribed therapies for moderate to severe psoriasis by dermatologists working at the private practices in Riyadh were narrow-band UVB and methotrexate, while adalimumab and etanercept were the most frequently prescribed biologic therapies. Wan et al.,⁴² studied dermatologists' preferences for first-line treatments of moderate to severe psoriasis and found that preferred therapies for male and female patients were: ultraviolet (UV) B, etanercept, methotrexate, and adalimumab. Compared to the study of Wan et al.,⁴² dermatologists in Riyadh were less likely to prescribe biologic therapies for moderate to severe psoriasis patients. This discrepancy can be explained by the high cost of biologics and also may be due to less experience of dermatologists working in Riyadh. We also found that most dermatologists still

prescribed topical treatments for moderate to severe psoriasis. This may reflect that they are still considering psoriasis as a skin manifestation with the occasional co-morbid condition and neglecting that it is a complex, systemic disease.

The findings of this study need to be interpreted in the context of study design. Limitations of the study include the low response rate. In addition to, the potential for reporting bias, which is inherent to questionnaire-based methodology. Another limitation in this study is that we did not investigate the reasons behind the dermatologists' practices and attitudes. Up to our knowledge, this study is the first one which assessed dermatologists' practices and attitudes towards assessment of psoriasis severity, HR-QoL, screening for CVD risk factors and systemic therapies in Saudi Arabia. However, further studies are needed for assessment of dermatologists' practices in governmental sector and the acceptability of the guidelines and the adherence of the dermatologists to them. We are also in need for studies on a greater number of dermatologists.

Our study suggests that most dermatologists did not routinely use a validated score for assessment of psoriasis severity or HR-QoL. Also most of them did not routinely screen patients with psoriasis for CV risk factors or arthritis. To encourage the dermatologists to improve their practices in the management of psoriasis, national guidelines for assessment of psoriasis severity or screening of CVD risk factors in psoriasis patients should be formulated. Educating dermatologists regarding the importance of the use of validated severity scores and HR-QoL questionnaires, and the screening for co-morbidities in everyday clinical practice is needed.

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