Psoriasis is a chronic, inflammatory skin disorder and approximately 1% to 3% of the world’s populations are suffering from it. As numerous studies have shown that psoriasis is highly correlated with psychological distresses, one of the critical issues in the psoriasis patient care is the psychological problem. However, in the existing care for psoriasis, no guideline has been developed for patients’ psychological issue. Therefore, the aim of this translational research is to develop an evidence-based psychological care guideline with an implementation and evaluation plan for psoriasis patients in a dermatology setting.

In this dissertation, 11 studies were selected after assessing the relevance of the obtained full texts. Data of these studies were extracted, and the quality of data was assessed by the Critical Appraisal Skills Programme and the Scottish Intercollegiate Guidelines Network. Evidences obtained from the literature review were aggregated and also critically reviewed. After these processes, an Evidence Based Protocol was developed. In the guideline, information related to the psychological assessment and interventions for psoriasis are included. Then the implementation potential of the guideline produced was examined in terms of the transferability, feasibility and the cost-benefit ratio. A pilot test was also conducted to identify any problems of the actual implementation of the mentioned guideline. Both process and outcome evaluation would be as used to assess the feasibility and the effectiveness of the guideline. In the end, this guideline is expected to manage psychological aspects of psoriasis patients so as to improve their quality of life.
“Psychological managements for adult patients with psoriasis”

By

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The Degree of Master of Nursing

at the University of Hong Kong

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DECLARATION

I declare that this dissertation represents my own works, except where due
acknowledgement is made, and that it has not been previously included in a thesis,
dissertation or report submitted to this University or to any other institution for a
degree, diploma or other qualifications.

Signed:_____________

TSOI YING SEE
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CHAPETER 1
INTRODUCTION

1.1.1 Background

Psoriasis is a chronic, inflammatory disorder which can occur at any site of the body. Apart from skin, it can affect joints, nails, scalps. According to Greaves (1995), 1-3% of the world population suffers from psoriasis. Based on an early report, the prevalence rate of psoriasis in the Far East including Hong Kong was reported to be 0.3% (Yip, 1984). Although the prevalence rate of psoriasis in Hong Kong was reported to be lower than the US, psoriasis, based on the statistics in 2001, was still found to be the fifth most common skin disease in Hong Kong government skin clinics (Lo, 2003).

1.1.2 Diagnose of psoriasis

The occurrence of psoriasis is irrespective with age and gender but the peak age-of-onset is in the second and third decades of life (Ameen, 2003). In the past 20 years, there have been many developments in the understanding of effective treatments for psoriasis, such as topical treatment, phototherapy, systemic treatment, biologic treatment and inpatient treatment (Elder, 2001). Traditionally, healthcare professionals would evaluate the clinical manifestations of disease such as the affected body surface area in order to assess the treatment–related outcomes (Fortune, 2002). However, it is known that patients’ psychological well-being may not be fully
reflected or may not correlated well with their physical signs and symptoms (Javitz, 2002). So, the traditional practice which only attends to patients’ physical symptoms may have underestimated the negative effects of psoriasis on psychosocial aspect. Reports have shown that patients with psoriasis experienced adversities in their daily lives such as social difficulties and family conflicts (Fortune, 2002). In order to increase the understanding about the psychological impact on psoriatic patients, recent studies have attempted to quantify the psychosocial burden of psoriasis patients (Loo, 2010).

1.2 Affirming the need and significance

The physical and psychological sufferings and disabilities related to psoriasis were found to be compatible to other chronic disease such as heart diseases, depression and arthritis (McHenry, 1992). For instance, pruritus, bleeding, burning sensation, and arthritis can cause physical discomfort. In addition, the psychological burdens such as stigmatization, embarrassment, social difficulties, and the physical sufferings may contribute to patients’ psychological distress (Lundberg, 2000). In particular psoriasis was found to significantly link with psychological distress such as anxiety and depression. Loo (2010), used the Short Form-36 and dermatology life quality index (DLQI), found that 34% of psoriatic patients had a significantly impaired quality of life. Regarding the impact on patients’ occupation, around 19% of the psoriatic patients quitted their jobs (Loo, 2010). Besides, the financial impact of
psoriasis on the society level should also be taken in account. This included the
government expenditure treating the psoriasis, reduction of productivity and the
unmeasured intangible cost (Loo, 2010). In Hong Kong, dermatological care is one of
the services under the Social Hygiene Service in the Department of Health. The
missions of social Hygiene service are to provide a qualified service and to support
and coordinate with other healthcare disciplines in the care of patients with skin
diseases. Psoriasis patients are a group of major targets in the dermatological care (Lo,
2003). In dermatology clinics, it is found that improving psychological well-being is a
critical issue in psoriatic patients’ care. However, there is yet a protocol or guideline
about the psychological care for psoriasis patient in the social hygiene service in
Hong Kong. This may be due to the implementation difficulties in politic or practical
aspect. A thorough psychological management including assessment, education and
intervention can promote positive patient outcomes and better compliance with the
treatment (Fortune, 2002). Consequently, patients would be empowered to be in
control of their own disease. Therefore a complete and concrete guideline is needed
for helping healthcare professionals to assess the psychological problems of psoriasis
patients as well as providing intervention to improve their quality of life.

1.3 Searchable and answerable question

For offering a holistic care for psoriasis patients, an effective psychological
management offered by nurses is critical. Therefore the research question of
“Comparing to the current standard care of patients with psoriasis in Hong Kong, how effective is a psychological management in improving their quality of life?” is addressed in this paper for the development of future guideline in dermatological nursing.

1.4 Objectives

This paper aims to develop an evidence-based psychological care guideline with implementation and evaluation plans for psoriasis patients in dermatology setting.

1 To search and review evidence on the effectiveness of psychological management in reducing psychological distress and improving quality of life for psoriasis patients.

2 To select related research studies and perform a quality assessment.

3 To develop an evidence-based psychological management guideline for psoriasis patients.

4 To assess the potential of the proposed psychological management guideline in current practice.

5 To develop an implementation and evaluation plan for the proposed psychological management guideline.
CHAPTER 2

CRITICAL APPRAISAL

This chapter will deal with the following issues: selection criteria, search strategies and methods of extracting and analyzing data.

2.1.1 Selection criteria

In order to gain a thorough understanding of the psychological managements for psoriatic patients, several criteria were made.

Inclusion criteria:

A broad scope if patients, such as those aged 18 or above diagnosed with psoriasis were included. There were no restrictions on the types of psoriasis, psychological intervention and assessments, and criteria for the recruitment of the subjects. The research outcome should mainly focus on psychological related measurements and interventions designed to improve the quality of life of subjects. The studies were limited to cohort studies, controlled clinical trials or reviews published in the English language only.

Exclusion criteria:

Since dermatological clinic will not handle psoriatic arthritis cases, any psoriatic arthritis related study was excluded. The medical treatment-focused studied or pharmacological therapies without nursing intervention were excluded. Letters, comments, news, authors’ opinions, articles and editorials were also excluded in this...
paper.

2.1.2 Searching engines

First, research with the empirical evidence has been searched from December 2010 to July 2011 by multiple searching engines. Sources to search clinical guidelines were CMA InfoBase, Health service/technology assessment text, Guidelines advisory guidelines, the national guidelines clearinghouse, Scottish Intercollegiate Guidelines Network, National Institute for Clinical Excellence, and Primary Care Clinical Practice Guideline.

All yielded no relevant guideline on the psychological care of psoriasis patients. Studies that have addressed a similar research question should be included in an integrative review (Polit & Beck, 2008). Four databases used were, namely, Cumulative Index to Nursing and Allied Health Literature (CINAHL), Medline, PubMed, and PsycINFO. More than 20 years (1985-2011) of studies were gone through to evaluate the use of psychological assessment instruments and intervention targeting at patients to reduce patient's psychological distress, increase knowledge in self psychological management skill so as to improve their quality of life. Other search strategies were also used, including searching other databases such as Yahoo and Google by the same keywords but no additional articles that could be included in this review were found. The keywords were “psoriasis”, “psychological”, “psychotherapy”, “assessment”, “education” and “intervention”.

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'Intervention’ search terms included psychological intervention, psychosocial treatment, treatment, cognitive-behavioral therapy, and counseling. Group sessions, individual consultation, internet and booklets could be used to provide psychological care. “OR” was used to border the result finding while “AND” was used to combine the keywords to retrieve the relevant papers. Search was carried out until no additional publications can be found in the reference lists. On the basis of the selection criteria, 114 abstracts were reviewed. Finally, the list of studies was narrowed down to 11 studies. 103 articles were excluded because of the following reasons: (1) participants under study were not psoriasis patients, (2) irrelevancy, (3) uncertain reliability of the materials e.g. abstracts, editorials, letters articles. In these 11 studies, management included both the assessment and interventions such as universal assessment instruments for measuring quality of life and psychological condition for psoriasis, educational programme and psychotherapy assessing on their effects in improving level of quality of life for psoriasis patients. Summary of bibliographic database search strategy and results were outlined in the Appendix 1.
2.2 Method of extracting the data

After reviewing the eleven selected studies, the data were extracted and presented in the table of Evidence (Appendix 2). Components which included the study type, evidence level, number of patients, sample characteristics, intervention, comparison, length of following up, outcome measurements and results were presented in the table (SIGN, 2008).

2.2.1 Study type

Seven of the studies were randomized controlled trails (RCT) (Zachariac, et al, (1996); Tausk., et al,(1997); Kernick.,et al, (2000); Gradwell, et al,(2002); Skarpathiotakis et al (2006); Shikiar, et al( 2006); Shikiar,et al (2003);while the other four were non-randomizes controlled trial(Fortune, et al., (2004); Fortune, et al (2002); Korte et al (2005); Sampogna, et a (2006)). Among the, non-RCT studies, one was cross-sectional study (Sampogna et al, 2006), one was prospective initial clinical study (Korte et al, 2005), one was case control study (Fortune et al, 2002) and one was age-and-sex-matched case-controlled prospective study (Fortune et al, 2004).

2.2.2 Research objective

Among the eleven studies, none of them have stated explicitly their research questions or hypotheses. However, all of them presented the research purpose clearly. Appropriate words were used in the studies with clear and concise writing. It is possible to assess whether the studies had met their objectives. Three studies aimed at
assessing the validity and reliability of the psychological assessment instruments for psoriasis patients (Sampogna et al, 2006; Shikiar et al, 2003 & Shikiar et al, 2006). Other studies aimed at investigating the effects of interventions to reduce psoriasis parents’ psychological distress and quality of life. Besides the psychological distress and quality of life, some studies also examined the patients’ satisfaction, patient's knowledge as well as the medical consultation time saved.

2.2.3 Characteristics of the participants

The inclusion and exclusion criteria of research participants were mentioned in all the eleven reviewed studies. Patient characteristics and the ranges of age were mentioned to be similar; ten studies targeted the psoriasis patients only, and only one study targeted both the psoriasis and eczema patients (Kernick et al, 2000). The sample size in each of the eleven studies ranged from 11-1095. Calculation of sample size can be used to estimate the required sample size which will produce the minimal bias for the study due to smaller sample size. However none of them reported the power analysis. Therefore, bias due to inappropriate sample size might exist in some studies (Portney, 2000).

2.2.4 Setting

Sample subjects were mainly recruited from the community by using different strategies. As the target group is the psoriasis patient, the interventions were carried out in outpatient settings such as psoriasis-specialty center, dermatology centers and
nurse-led clinic in ten studies. Only one studies recruited the subjects from the hospital (Sampogna et al, 2006).

2.2.5 Intervention and control groups

Eight studies included a control group for comparison (Fortune et al, 2004; Zachariac et al, 1996; Fortune et al, 2002; Tausk et al, 1999; Kernick et al, 2000, Sampogna et al, 2006; Shikiar et al, 2006; Shikiar et al, 2003). Three studies compared the outcome before and after the intervention (Gradwell et al, 2002; Skarpathiotakis et al, 2006; Korte et al, 2005). The length of following up varied from 6 weeks to 6 months.

2.2.6 Content of the programme

Two studies about assessment tools included pharmacological intervention to compare the validity, reliability and responsiveness to clinical changes of different psychological assessment instruments (Shikiar et al, 2006 & Shikiar et al, 2003). There was no intervention in one study about the assessment instrument by comparing the psoriasis patients with other medical patients (Sampogna et al, 2006). Three studies related to psychological educational program only (Gradwell et al, 2002; Kernick et al, 2000; Skarpathiotakis et al, 2006). Three studies included psychotherapy (Zachariac et al, 1996; Fortune et al, 2002; Tausk et al, 1999). Three studies included multiple interventions which combined the educational program and psychotherapy (Fortune, 2002 & 2004, Korte, 2004). All of the interventions were
carried out by medical, psychological or nursing staff. For the control group, the subjects had received normal care without any psychological care.

2.2.7 Outcome Evaluation

For the studies about psychological assessment, the outcome focused on the reliability, validity and patient responsiveness of Dermatology life quality index, SF 36 and Euro QOL 5D. For the intervention part, the outcome mainly focused on the patients’ quality of life. Nevertheless, some of them included measurement of psychological distress such as level of anxiety or depression. A few studies also included patient knowledge level, disease severity and coping strategies.

2.2.8 Results

The results were calculated and presented with P value and confident level (CI) to show the different level between the groups. There are three studies about psychological well-being assessment for psoriasis patients, which reported the reliability coefficient being larger than 0.8 (Shikiar et al, 2006, Shikiar et al, 2003 & Sampogna et al, 2006). Other eight studies demonstrated a positive effect of psychotherapy and educational program compared with the control group having p value smaller than 0.05.

2.3 Performing appraisal and quality assessment of the studies

In this paper, Critical Appraisal Skills Programme (CASP) was used to address the methodological problem in the studies and provided fulfilled percentage of key
criteria in the critical appraisals so as to identify the quality of the studies evidence (Public Health Resources Unit, National Health Service, 2010). Based on the checklist, the methodological quality from low to high was rated with the criteria. For non-RCT interventional studies, appraisal tool for RCT can be used with the questions regarding randomization (questions 2 and 3) omitted. There are ten questions with “Yes”, “No” or “Can’t tell” which were recorded to each in the appraisal tool. “Yes “scored one point for each positive answer. Maximum ten points would be scored for each article. Fulfilled percentage was then calculated to provide information of quality of studies.

According to the CASP assessment tool, there was no clear cut scoring to reflect the level of evidence (Public Health Resources Unit, National Health Service, 2010). Tables of critical appraisal are presented in Appendix 3. In this paper, the level of evidence was considered high when the studies fulfilled 85% or above of the criteria. When 70% -85% and less than 70% of the criteria are fulfilled, the levels of evidence were considered medium and low, respectively. In order to assess the internal validity and overall assessment, each study was rated by SING coding system after the critical appraisal. By considering the study type, the level of evidence of studies was addressed (SIGN 2008a, 2008b) (See Appendix 4a). For the RCTs, two studies (Shikiar et al., 2006 & 2003) were rated at the highest evidence level 1++, four are at level 1+, and the remaining are at level 1-.with 50% to 85% of CASP
criteria fulfilled. Among the non-RCT studies, two are at level 2++ (Fortune et al, 2002 & Fortune et al, 2004), two are at level 2+ (Sampogna et al, 2006 & Korte et al, 2005) with 70% to 85% of CASP criteria fulfilled. The levels of evidence and the summary of quality assessment are presented in Appendices (4b) and details will be discussed in the following.

2.3.1 High level of evidence studies

Three studies that fulfilled most of the methodological criteria in CPSP were classified as high level of evidence studies (Shikiar et al, 2006; Shikiar et al, 2003 & Fortune et al, 2004). The 2 studies having higher levels of evidence showed equalization effect of randomization between the comparison groups (Shikiar et al., 2006 & 2003). They were double-blinded RCTs. Blinding was done for the investigators during the treatment period and group allocation was described clearly. Performance bias was minimized by providing detailed interventions and theoretical-based protocols for adherence. It is advisable to blind those responsible for treatment and assessment from the research hypothesis, so that they do not approach their tasks with any preconceived expectations and so that such knowledge cannot influence their interactions with the subjects (Portney, 2000). All studies presented the measurement tools and results clearly. Tables or figures were used to make the result to be more presentable. Those significant results were reported with the effect size and pvalue so that the data were precise enough to support researchers to make
decisions. Although all studies did not report the power calculation, they had a large sample size (147-1095 subjects) to minimize the play of chance. Besides the two RCTs, one non RCT study also rated to be high level (Fortune et al, 2004). According to (SIGN 2008), well-designed controlled trials without randomization were the third strongest levels of research methods, which generate good evidence in terms of the methods alone. The study was reported logically consistent with objectives, design, methods, result and conclusion. The statistic method was described clearly. By taking account of the population, it is found that settings and interventions of these studies were similar and the results were convincing and conceivable to be recommended for application.

2.3.2 Medium level of evidence studies

Seven studies achieved the medium evidence of level (Zachariae et al, 1996; Tausk et al, 1999; Kernick et al, 2000; Gradwell et al, 2002; Sampogna et al, 2006; Korte et al, 2005; Fortune et al, 2002). Four studies were RCTs while three studies were non RCTs. Binding of the investigators were not described in three RCT studies (Zachariae et al, 1996, Kernick et al, 2000; Gradwell et al, 2002) except one pilot study used the single blinding (Tausk et al, 1999). All of the RCT studies have clear randomization (Zachariae et al, 1996), (Tausk et al, 1997), (Kernick et al, 2000), (Gradwell et al, 2002). However, only one study has adequate allocation concealment (Gradwell, 2002). The group allocations were mentioned in all these studies. In order
to ensure the consistence and minimize the performance bias, data collection and follow up were done in the same way and same time intervals. The sample sizes were reported with the number of subjects ranging from (51-330) except one pilot study (Tausk et al, 1999) with subject only 11. Besides, a reliable instrument should be used to measure the target variable without significant error. Only two studies reported the validity and reliability of the instrument used (Fortune, 2002 & Sampogna, 2006). All the results showed a positive effect with the significant p value reported. Among these studies, the follow-up frequencies, interventions settings and outcome measurements were assessed so as to provide relevant information in the proposed study.

2.3.3 Low level of evidence studies

One RCT study was classified as having a low level of evidence as only a few criteria were fulfilled (Skarpathiotakis, 2006). First, small sample sizes (83 participants) with no power calculation was found in the study. The study did not mention about blinding and was at risk of performance and measurement biases. The length of follow up of the studies was either unknown. Thus, the effect sizes were small and the results were not precise due to the unclear or inappropriate significance testing. No risk indexes or 95% CI was presented. The lack of confounder measure makes the effectiveness of the interventions doubtful. (Portney, 2000)

2.4 Synthesis of findings from the reviewed studies on the interventions

In the following part, summary and synthesis of data were discussed by taking
consideration of the results and levels of evidence of the selected studies.

2.4.1 Psychological assessment (3studies)

Three studies mentioned about the psychological assessment for psoriasis patients. (Sampogna et al, 2006; Shikiar et al, 2003 and Shikiar et al, 2006). First, Sampogna et al. (2006) suggested adding the 36-item short form of the Medical Outcome Study questionnaire (SF-36) to dermatology- and psoriasis specific questionnaires to detect any missing area in functional and psychological problems. Second, two studies assessed the responsiveness, validity and reliability of the Dermatology Life Quality Index (DLQI), the Short form 36(SF-36), and the EuroQOL 5D (EQ-5D) (Shikiar, 2003 & Shikiar, 2006). The studies assessed the reliability and validity of the DLQI and the responsiveness to change in the clinical status of psoriasis patients in a 12-week clinical trial. According to the result, DLQI was supported to be a psychometrically sound and responsive measure of psoriasis-specific outcomes that provided a comprehensive information about the impact of clinical signs and symptoms on patient well-being. On the other hand, the correlation of SF36 and DLQI demonstrated that disease related changes in the SF-36 is mainly dependent on two specific domains, bodily pain and social functioning. About the EQ-5D, the scores were basically the same as the respond of most of the SF-36 scores. The studies recommended that DLQI as a single index score can adequately capture both the functional and psychosocial impact of patient with
moderate to severe plaque psoriasis (Shikiar, 2003 & Shikiar, 2006).

2.4.2 Psychological intervention

Psychotherapy (3 studies)

Three studies included psychotherapy as part of the intervention, and yielded significant results (Zachariac et al, 1996; Fortune et al, 2002; Tausk et al, 1999). Psychotherapy could be in the form of individual or group. The contents of the psychotherapy consisted of cognitive behavioral therapy, relaxation training and symptom control imagery training in two studies (Zachariac et al, 1996; Fortune et al, 2002). Only one pilot study included hypnosis (Tausk, 1999). Six to seven sessions with the duration ranged from 1.5 hours to 2.5 hours per sessions. Both the individual and group psychotherapy showed significantly improvement on psychological effect of psoriasis patients. The percent of patients showing reduced stress was greater in treatment group than in control group p value < 0.05. (Zachariac et al, 1996). The study also indicated that participation in the group psychotherapy programme resulted in a greater reduction in clinical severity of psoriasis anxiety, depression, psoriasis-related stress with all p-value < 0.001 and disability with p-value = 0.04 at 6 weeks and 6 months follow up.

Psychological related educational programme (3 studies)

Three studies investigated the cost effectiveness of impact of educational programme on the quality of life of psoriasis patients (Skarpathiotakis et al, 2006;
Kernick et al, 2000 & Gradwell et al, 2002). In a randomized clinical trial of Kernick et al. (2002), the psycho educational intervention conducted in the outpatient setting by specially trained nurses was found effective in improvement in the DLQI of 25% of patients p<0.01. Nurses received an 87 hours structured training programme including ward and outpatient attendance, direct tuition, and background reading encompassing the treatment, education, and psychological support of patients, cares and their families. Another individual educational session that included a video and handouts and one-on-one training with a nurse showed the benefits to patient including knowledge and awareness about psoriasis. The content was about proper skin care, coping psychological problems and different medication and treatments (Skarpathiotakis et al, 2006). In a tailored psycho educational intervention, a dermatology nurse provided practical demonstrations of treatment application and to give details of further sources of support in 20 minutes patient interview. Written material was given afterward. The result showed the improvement by approximately 3 point on the DLQI scale after 6 weeks. In the intervention group, 33% patient reduced their medical consultation appointment that means consultation time is saved (Gradwell et al, 2002). The result supported the cost effectiveness of the psychological patient education by dermatology nurse.

**Combined program (psychotherapy + educational programme) (2 studies)**

Two studies combined the psychotherapy with educational sessions in invention
(Fortune et al. 2004 & Korte et al., 2004). A disease management programme consisted of disease education, disease management training, and psychological support, together with topical treatment (Korte et al., 2004). The programme included three consultations by nurse over a 2 month period.

Patients were given booklets and videotape to take home. Patients reported a high satisfaction with the programme and quality of life significantly improved. Programme evaluation was done and recommended that to increase the number of consultations and reduce overlap in the case record form book and improve the comprehensibility of some of the study materials. (Korte et al., 2004). The programme conducted by Fortune et al. (2004), is a six-session cognitive behavioral programme delivered by medical clinical psychology, and nurses. The duration of each individual group session was 2.5 hours. The programme consisted of education about knowledge of psoriasis, stress reduction techniques and cognitive techniques. The result showed significant reductions in illness identity and their attributions for emotional causes of their psoriasis.

2.4.3 Conclusion

In this chapter, studies concerning the effects of assessment tools, psychotherapy and educational programme were reviewed. A review of these studies and the state of current knowledge they revealed have provided evidence of the effects of the above interventions in reducing psoriasis patients' anxiety and improving their quality of life.
The selected studies have showed that DLQI for psychological assessment, psychological intervention with cognitive behavior therapy, relaxation training and education programme on treatments are the main components of the proposed evidence-based protocol. In this regard, a set of practice clinical guidelines grounded on such evidence is developed for translation to the clinical settings in Hong Kong.
CHAPTER 3

IMPLEMENTATION POTENTIAL

In the previous chapter, eleven western studies have indicated that psychological assessment, psychotherapy and educational program are some of the effective methods in reducing the severity of psoriasis and psychological distress, and in improving the quality of life through psychological management in psoriasis care. However, there exist cultural and lifestyle difference among people from different background in Hong Kong. This chapter will further examine the target audience, target setting of implementation, implementation potential in local setting, transferability, feasibility and cost-benefit ratio of innovation to see whether an evidence-based guideline can be developed effectively.

3.1.1 Target setting

According to the review studies, the psychological management program is suggested to delivery in the outpatient setting. Therefore the target setting of this guideline will be in one of the dermatology clinics in Hong Kong. Dermatology clinic is one of the services under the Social Hygiene Service in Department of Health. Treatments for psoriasis patient have been determined to include topical steroid, systematic treatment and photo-therapy. The interval of follow-up sessions is to be decided according to the level of severity. For mild psoriasis targets, interval is 16-30 weeks; for moderate psoriasis targets, interval is 8-16 weeks; and for severe psoriasis
targets, interval is 4-8 weeks. A Kowloon cluster clinic has been selected to be the most optimal place to conduct the study, since there are sessions with a psoriasis specialist available at that particular clinic that provides special care to the patients.

According to the past literature, it is assumed that having around 20 to 30 psoriasis patients per each consultation session in each clinic will yield the most optimal result for the study. The transferability of the target setting of this innovation will be elaborated in the following part. Selected participants will be recruited to attend six-2-hour regular health talk. These psoriasis patients will also be invited to participate in the psychological management program. Baseline assessments which will be further described in the Chapter 5 will be provided once they agree to participate and dates for follow-up sessions will be scheduled. Next the interval of the session of the target patients shall be determined. These sessions will be conducted in the period of six weeks. Lastly, it is expected that six nurses are required to conduct the study in each clinic, with two of them responsible to provide health education to the target patients.

3.1.2 Target audience

As all the review studies targeted adult patients with psoriasis, the proposed guideline provides recommendations based on current evidence for best psychological management of psoriasis in adults aged 18 years old or above. Thus, it excludes the children with psoriasis. The targets patients for the study include both male and
female with no specific requirement on the educational level, but they must be able to communicate with other using Cantonese or Putonghua. No limitation has been set on types of psoriasis of the target subjects. The target user that is recommended to carry out the implementation of the study will be dermatology nurses, dermatologists, psychologists, medical physicists, psychiatrist, and occupational health professionals.

3.2 Transferability

3.2.1 Patient Characteristics

The range of age of target subjects in the review studies is 21 to 69 years old. Both female and male subjects were recruited across all studies. Based on a literature review, ten studies were carried out to target only the psoriasis, and only one study was carried out to target patients with both the psoriasis and eczema symptoms (Kernick et al, 2000). Also, the duration based on the review studies with psoriasis is ranged from 3 to 64 years across all types of psoriasis (Fortune et al, 2004; Zachariac et al, 1996; Fortune et al, 2002; Tausk et al, 1999; Gradwell et al, 2002; Skarpathiotakis et al, 2006; Korte et al, 2005 Kernick et al, 2000, Sampogna et al, 2006; Shikiar et al, 2006; Shikiar et al, 2003). In the local setting, there are around 20-30 psoriatic patients in one government dermatology clinic in every consultation session. Therefore, the target audience of the proposed intervention is found to be similar to the review studies.
3.2.2. Setting

Based on the review studies, interventions were implemented mainly in the outpatient settings such as dermatology clinics, psoriasis-specialized centers, dermatology centers and nurse-led clinics (Fortune et al, 2004; Zachariac et al, 1996; Fortune et al, 2002; Tausk et al, 1999; Gradwell et al, 2002; Skarpathiotakis et al, 2006; Korte et al, 2005 Kernick et al, 2000, Sampogna et al, 2006; Shikiar et al, 2006; Shikiar et al, 2003). In the local setting, there are around 20-30 psoriatic patients in one government clinic in each consultation session. Therefore, the size of the target patients is similar the review studies mentioned in this report. Similarly the target setting in this proposed intervention is in an outpatient dermatology clinic of the Department of Health in the Kowloon area. The dermatology clinic is one of the research and education centers under the social hygiene department. Some of psoriasis patients visit the research team regularly to carry out different types of studies. Therefore it will be easy to recruit and to group patients together to attend the psychological management program.

3.2.3 Duration

The duration of the implementation should not be too long before patient’s regular consultation. According to the review studies, the proposed implementation period is expected to be six weeks to six months with six to seven sessions, and duration per session is estimated to be 1.5 hours to 2.5 hours (Fortune et al, 2004;
Zachariac et al, 1996; Fortune et al, 2002; Tausk et al, 1999; Gradwell et al, 2002; Skarpathiotakis et al, 2006; Korte et al, 2005; Kernick et al, 2000, Sampogna et al, 2006; Shikiar et al, 2006; Shikiar et al, 2003). Based on the clinics manpower and the number of patients, the proposed program will include six sessions per six week with duration of two hours in each session in each group of participants.

### 3.2.4 Program components

According to the review studies, the psychological program includes three parts: assessment, educational program and psychotherapy (Fortune et al, 2004; Zachariac et al, 1996; Fortune et al, 2002; Tausk et al, 1999; Gradwell et al, 2002; Skarpathiotakis et al, 2006; Korte et al, 2005; Kernick et al, 2000; Sampogna et al, 2006;). First in assessment, Dermatology Life Quality Index (DLQI) is used in most of the review studies (Sampogna, 2006; Shikiar et al, 2006; Shikiar et al, 2003). There are several psychological researches that are currently being conducted in the Kowloon cluster dermatology clinic. DLQI is also used in these studies to measure the outcome. Therefore, nurses are familiar with the use of the DLQI. The interventions include cognitive behavioral stress management, relaxation training, and symptom control training. Secondly, in education, it focuses on teaching patient about effects on psychosocial functioning and disease management. Lastly in the psychotherapy, nurses should demonstrate the techniques in coping behavior and cognitive thinking. All these components are designed based on previous review studies. Therefore, the
proposed intervention should be transferable.

3.3 Feasibility

3.3.1 Administrative support

In the dermatology clinic, any guidelines or interventions should be proposed to and be approved by the service head consultant before implementation. According to a local sex and age matched healthy control study, it has been illustrated that 132 Chinese psoriasis patients have significantly worse in quality of life than healthy controls. (KM Ho, 2006). This local study was conducted by consultant of social hygiene service in the Department of Health. KM HO suggested that allocating appropriate resources to improve the quality of life in psoriasis patients is very important. This can also decrease the utilization rate so as to lessen the health system burden. Therefore Ho reminded the health care professionals to pay attention to the impairment of psychological and social functioning of psoriasis patients. The proposed intervention should be welcomed to the service head. Besides, the senior nursing officers in the field of dermatology always emphasize the importance of carrying out psychological care to the patients. They provide regular training and sharing to front line staffs about their experience and new research findings of the psychological management. They often encourage and support nursing staffs to innovative and to provide holistic care to the patient.
3.3.2 Front line staff supports

Although nurses are provided with autonomy, they may not be ready to implement a change in practice and may identify limited time as a barrier. Colleagues may lack confidence in their ability to apply the new skills, because it takes time to do so. As time is limited, it may be time-consuming for nurses and doctors to provide psychological assessments and therapies to the psoriasis patients. To overcome the lack of confidence in starting a new form of therapy, written materials and related training should be provided to allow nurses to review before the actual intervention. The written materials can remind them about the potential benefits of the innovation of psoriasis patient in reducing their psychological distress and thus improve patients' quality of life. Case sharing sessions can be added to the routine meeting to exchange experiences and to discuss any case scenarios. In reviewing each of the conducted cases, clinical skills and performance can be a routine part of therapeutic work and should systematically incorporate evidence into practice. Also, the innovation can be held in groups of small division instead of individual interview. This can save lots of time by integrating patients with similar problems into the same session. The routine educational programs are held in the clinic with different topics for decades. This means the innovation will not cause extra workload to nurses in the education part. Therefore nurses should be eligible to arrange the psychological management program efficiently.
3.3.3 Staff training, measurement tool and equipment

In dermatology clinic, health nurses are responsible to the patient education. In current setting, there are two to three health nurses who can perform this task. There are regular courses on Cognitive Behavioral Therapy for Chronic Patients in Association of Hong Kong Nursing Staff. The courses facilitate nurses to understand the foundation concepts and principles on “Cognitive Behavioral Approaches” for people with chronic illnesses, to assess and to explore the bio-psychosocial tasks of patients after the onset and during the course of illness, and to have a better understanding on the advantages and limitations on counseling theories and principles into daily clinical practice. Nursing staff can apply for study leaves and sponsorships. Facilities and resources that are needed in this innovation are conference rooms and handbooks for patients. Handbooks should include a detailed explanation of psoriasis, disease management and its coping behavior. Other recourse such as paper and photocopy machine should be made available. A conference room for educational programs is also required. In term of the implementation of the study, after an introduction and a demonstration by nurses, patients can read the handbook by themselves. The measurement tools that will be used in this innovation are the Chinese version of Dermatology Life Quality Index (DLQI) and Short form 36(SF36). The tools are reliable and have been validated to measure quality of life and psychosocial status of psoriasis patients. As there are several psychological related
researches that are currently being conducted in our service, the DLQI and SF 36 are already translated to Chinese and are easy to understand. In conclusion, there are high feasibility of innovation and implementation in the proposed study described in this report.

3.4 Cost/ Benefit ratio

3.4.1 Potential risks

First of all, there is no adverse effect of the proposed intervention on patient. All the review studies are evidence based and have no harm but benefits to the patients. However it is difficult to have patients to come back for follow-up appointments because they may think that such therapies are not required. Instead of the psychological care, they may prefer facial the creams or pills to relieve the effect of the symptoms. This may affect the effectiveness of the program. Therefore, nurse should help patients to identify any psychosocial problems that they may have. This enables us to suggest practical ways to address patients’ concerns, allowing them to see that psychosocial program is indeed feasible. Nurses should discuss situation in an open and accepting manner so as to allow verbalization of feelings and encourage attendance at support groups (Jankowiak, 2004).

3.4.2 Potential benefits

A review of short term psychotherapy for psoriasis patients indicated that group psychotherapy increases the quality of life and it has been recognized to strengthen
individual members and to help them to cope with their medical challenges (Capoore, 1998). The review has also supported that group psychotherapy is a cost effective and time efficient modality treatment. Another review study suggested that patients can feel less isolated and can expose themselves to new coping skills when having group psychotherapy (Fortune, 2002). It is found that 33% of follow-up appointments with doctor consultation were canceled after the psychological program (Gradwell, 2002). Thus, group psychotherapy should help reduce this figure. In current setting, time spent on each medical consultation with each psoriasis patient is 10 min. The hourly salary of a medical officer of our service is $500. Therefore, the estimated cost saved in consultation will be $5197 per month. Moreover, the use of topical medications was decreased from 60% to 41% in the intervention group (Fortune, 2002). According to the retail selling price from pharmacy internal record, the price of topic medications per patient per each follow up session is $500. In addition, patients who participated in the psychological program had a mean reduction in anxiety scale scores of four points after a time period between six weeks and six months, while patients in the control arm of the study showed a mean reduction of only 1 point. Depression scores were reduced by 3 points in the intervention group by 6 weeks, but showed an increase in the standard care group of 1 point at the same time-point (Fortune, 2002 &2004). Patients in the high-level worry group cleared with PUVA treatment at a rate 1.8 times slower than that of the low-level worry group (Fortune,
2003). By considering the time spent on photo-therapy by nurse (30 hours per month), the cost saved in photo-therapy will be $650. Therefore, overall cost saved in this innovation per month will be $9198.

3.4.3 Cost

The cost of the psychological program includes staff training, education materials, assessment tools, equipment and manpower. The program fee of psychotherapy course in Association of Hong Kong Nursing Staff is estimated to be $800 per each eight-hour course. Two health nurses in the clinic are required to attend the course. The hourly salary of a nurse in Department of Health is $130. The total cost for staff training will be $3680. The total estimated cost of handbook is $500. Since conference room and equipment such as computers, projectors and printers are all available in the clinic. No extra money is needed to be spent on these categories. In the implementation of the program, the time for nurses to conduct the program will be two hours per session. Total eight sessions is to be proposed in this innovation, which costs about $2080. The overall cost used in this program per month will be estimated to be $6260. (See Appendix 5)

3.4 Conclusion

After balancing the benefit and cost, the cost benefit ratio is 0.68, which is less than one. This indicates that the innovation is cost effective. The proposed innovation
can reduce the psychological distress of psoriasis patient and increase their quality of life. As there exists a correlation between psychological status and the skin condition of psoriasis, reducing their psychological distress can decrease the consultation time, the use of topical cream and the duration of photo-therapy. The cost used in staff training is just a short term expenditure. Since the advantages of the intervention outweigh the risks and cost, this innovation is highly recommended.
CHAPTER 4

EVIDENCE-BASED PRACTICE GUIDELINE

Title: “Evidence Based psychological education program for psoriasis patients”

This guideline aims to provide dependable knowledge, skills and support to health care professionals with evidence based reference on handling the psychological problems psoriasis patients by integrative psychological management program. The guideline users include dermatology nurses, dermatologists, psychologists, medical physicists, psychiatrist, and occupational health professionals. The guideline can be applied on the all types of psoriasis patients aged 18 or above who is communicable in Cantonese or mandarin.

Based on the SING (2008), the level of evidence (level 1-4) and grades of recommendation (ABCD) will be rated in the guideline (appendix6).

Aim and Objectives of the psychological management program

Aims

To reduce psychological distress and to improve the quality of life of psoriasis patients

Objectives

To assess patients’ psychological status

To improve patients' knowledge about the psychological management

To train up patient’s coping strategies and relaxation techniques
To provide opportunities for sharing and express feeling towards the diseases

Recommendations

Recommendation1.0

Grade of recommendation A

Psychological assessments should be done before and after the psychological management program.

Evidence: Psychological assessments provide baseline information to the health care professionals before the program. Nurses can base on the result to provide more specific intervention to patients and evaluate patients’ response and barrier of the program (Sampogna, 2006; Shikiar, 2006; Shikiar, 2003; 2+, 1++, 1++)

Recommendation1.1

Grade of recommendation A

Dermatology Life Quality Index (DLQI) is recommended to be used in the psoriasis related psychological assessment. It can be single use or combine with the Short form 36(SF36) to detect any missing area in the functional and psychological problems.

Evidence: DLQI was supported to be a psychometrically sound and responsive measure of psoriasis specific outcomes that provided a comprehensive information about the impact of clinical signs and symptoms on patient well-being. SF36 and DLQI demonstrated that disease related changes in bodily pain and social functioning.
DLQI can adequately assess the psychological impact of psoriasis patient by single use or combine with SF 36 (Sampogna, 2006; Shikiar, 2006; Shikiar, 2003; 2+, 1++, 1++)

Recommendation 1.2

Grade of recommendation A

Body surface area should be recorded at the first time and the end of program.

Evidence: There was association between psychological distress and clinical severity of psoriasis. The diseases severity can be assessed by the psoriasis area and severity index. The psychological management program was noted that there was improvement of disease severity (Sampogna, 2006; Shikiar, 2006; Shikiar, 2003; 2+, 1++, 1++)

Recommendation 2

Grade of recommendation B

Program should be delivered by trained and skilled health care professionals.

Evidence: Nurses should receive a structured training about education and psychological support of patients. Trained nurses are well placed to provide practical advice on effective application of treatment. (Fortune, 2002; Gradwell, 2002; Kernick, 2000, Korte, 2005, Skarpathiotakis, 2006; 2++, 1+, 2+, 1+, 1-)
Recommendation 3

Grade of recommendation C

Conference room or private room should be prepared to reduce the environmental interruptions such as noises during teaching.

Evidence: Conference room provides a pleasing and relaxing environment where patient can feel at ease in a comfortable setting to express themselves in the psychotherapy. Patients can be more focus on the teaching (Gradwell, 2002; Skarpathiotakis, 2006; 1+, 1-)

Recommendation 4

Grade of recommendation B

The psychological management program can be run in group with patients 6-10 per sessions. The implementation periods are from 6 weeks to 6 months.

Evidence: Group programs with 6-10 patients per session were found to be effective measure for the psychological management in psoriasis care. Results found that there was greater reduction in clinical severity of psoriasis and psoriasis related psychological distress in group psychotherapy with follow up of 6 weeks and 6 months (Fortune, 2002; Fortune, 2004; Gradwell, 2002; Kernick, 2000; Korte, 2005; Tausk, 1999; Zachariac, 1996; 2++, 2++, 1+, 2+1+, 1+)
Recommendation 5

Grade of recommendation B

The program should include cognitive behavioral stress management, relaxation training, symptom control training.

Evidence: According to the high and medium review studies, the psychological program included the components of cognitive behavioral stress management, relaxation training, symptom control training. Positive outcomes were found in these studies (Fortune, 2002; Fortune, 2004; Gradwell, 2002; Kernick, 2000; Korte, 2005; Tausk, 1999; Zachariac, 1996; 2++, 2++, 1+, 2+1+, 1+).

Recommendation 5.1

Grade of recommendation B

Help patients to identify the preceded symptoms of anxiety or depression.

Evidence: Dermatology nurses are responsible to help patients to identify the preceded symptoms of anxiety or depression in the studies (Fortune, 2002; Fortune, 2004; Gradwell, 2002; Kernick, 2000; Korte, 2005; Tausk, 1999; Zachariac, 1996; 2++, 2++, 1+, 2+1+, 1+).

Recommendation 5.2

Grade of recommendation B

Demonstrate the relaxation techniques and effective coping strategies to patients.

Evidence: In the intervention, program educators demonstrate the relaxation
techniques and coping strategies to the patients (Fortune, 2002; Fortune, 2004; 2++, 2++)

Recommendation 6

Grade of recommendation B

Information handbooks which include the content of psoriasis, disease management and coping behavior should be given to patients.

Evidence: Patients are provided with education sessions that include a set of handout or booklet. Nurses can use the handouts to assess in the teaching process. Content of booklet is recommended to improve the comprehensibility of some of the study materials (Gradwell, 2002; Kernick, 2000; Korte, 2005; Skarpathiotakis, 2006; 1+, 1+, 2+, 1-)

Recommendation 7

Grade of recommendation A

DLQI and SF36 should be completed at the end of the whole program to evaluate the program effectiveness.

Evidence: DLQI and SF36 are used to assess the outcome and program effectiveness after the intervention. DLQI and SF36 are found to be reliable and valid to assess the quality of life and psychological distress of psoriasis patient to evaluate the effectiveness of program (Sampogna, 2006; Shikiar, 2006; Shikiar, 2003; 2+, 1++, 1++)
CHAPTER 5

IMPLEMENTATION AND EVALUATION PLAN

In this chapter, implementation and evaluation plans of the proposed translations study mentioned in Chapters 1 to 4 will be discussed. Implementation plan includes communication plan with stakeholders and pilot testing of the psychological program.

In the evaluation plan, the focus will be on the outcomes of the patient, healthcare providers and system.

5.1 Implementation plan

5.1.1 Communication Plan

The stakeholders of the psoriasis psychological management program should first be identified before the communication plan started. In this translations study, stakeholders include 1) decision makers such as service head of social hygiene department, senior nursing officer, 2) trainers including psychologists, nursing officers, and senior nurses, and 3) front line nurses.

5.1.1.1 Communication with senior nurses and trainer

A nursing officer and two senior nurses will be recruited to form a team to guide the change and carry out the psychological management program. As this is a psychology related innovation, team members should approach psychologists to seek their cooperation. Psychologists are trainers in this innovation. They can also provide professional information about the psychological management in the clinical
practice. Afterwards, nursing officers and senior nurses are going to assist in the training and as role model during implementation. They are experienced in carrying out new clinical guideline so they can provide useful advice and information on potential barriers of the innovation and can suggest the possible solutions. Furthermore, they are important links of communication between the management level and front line nurses. The first meeting among the psychologists and the nurses will be held in week one and two before presentation to decision makers. Proposal concerning the guideline and details of the program will be given to them in the meeting. In the forty-five minute meeting, details about the guideline including contents, significance, and budget plan and time line will be explained and discussed.

Possible problems and queries raised by the nursing officers and senior nurses will be further discussed and solutions will then be suggested. The regular meetings will be held in week 5 and 6 after getting approval from the decision maker and after the programme has started. Guidelines will be refined after collecting opinions from decision makers and front line nurses. Two senior nurses in the target setting will cooperate with the psychologists to train the front line nurse to carry out the innovation. They will act as role model during the implementation. Also they will give a clear vision for the innovation by providing instruction of the guideline to help the nurse to handle possible problems and collect feedback from them. All these can encourage the front line staff to use the new guideline.
5.1.1.2 Communication with decision maker

In the Department of Health, every innovative program should be proposed to department head to get approval. The aims of the meeting with decision maker are to get support for manpower and resource allocation before being implemented in clinical practice. The proposal, which includes content of presentation, timeline of innovation and budget plan, would be given to the decision makers for reference before the regular meetings should take place. In week 3 to 4, the evidence-based guidelines will be presented to all decision makers during an hour meeting. Consultant doctors and senior nursing officers will be invited to attend the meeting. The guideline will be presented in the weekly regular department meeting because all decision makers would be there in the meeting. One hour is appropriate duration to present the proposal. In the presentation, the significance of needs, background and rationale of this innovation will be discussed. Summary on review findings and data synthesis can be explained to emphasize the need of change. The content, implementation potential, cost-benefit ratio, potential risk, barriers and solution, target population with inclusive and exclusive criteria and staff training should be also included in the presentation. The administrators may be concerned with the financial matters, benefits and risks of the innovation. Therefore, a clear budget plan should go with the proposal. Administrators are encouraged to raise their queries and comments in the Question and Answer section at the department meeting when the
guideline was presented. Based on the feedback from administrators, the guideline and implementation plan of program will be amended and preceded after getting approval and support.

5.1.1.3 Communication with front line nurses

Front line nurses are the people who implement the innovative program. Therefore it is important to communicate with them and to ensure they understand the guideline. In week seven, briefing and training will be given to the front line nurses to introduce the guideline and sustain the change process. In the briefing session, nurse can enquire themselves to carry out the innovation, voice out their concerns and difficulties and give feedback and suggestions towards the guideline. A forty-five minute briefing session will be held to introduce the clinical significance, content of guideline, details of implementation and evaluation, scheduled of pilot, skill in obtaining consent and data collection in the program. The briefing aims to enhance the nurse’s awareness and knowledge of the guideline so as to change their attitude and behaviors to support and sustain the use of the guideline in the psoriasis psychological care. Moreover, four training workshops with 2 hours’ duration will be delivered to the front line nurses. During these eight hours’ training, nurses will learn how to apply cognitive behavioral therapy on the psoriasis patients, other relaxation techniques, assessment tools and skills and review proper documentation
charting in the psychological management. The above information can increase their confidence and ensure they have adequate knowledge to implement the innovation. Handbooks which record the recommendations of the guideline, complex flow charts describing the procedures can be distributed to the nurses to help them carry out the guideline smoothly. Two case sharing sessions can be added during the regular meeting to exchange experience and difficulties can be discussed. By reviewing of real life cases, clinical skills and performance can be improved and nurses will feel that they are being concerned. All these actions can gather support of staff and reduce resistance in the change process.

5.1.2 Pilot testing to try out the guidelines

A pilot test will be conducted at the beginning to assess the feasibility of the innovative program and staff acceptability towards the guideline. Researchers can try to integrate the recommendations of guideline into the clinical settings and practice to test out the cost effectiveness of the program. Pilot study can also provide information on feasibility of the program for further modification of the intervention and calculate the sample size.
5.1.2.1. Aims

1) To test the feasibility and flow of the innovation.

2) To collect feedback from nurses, doctors and patients.

3) To identify any barriers and resistance for modification and refinement of the innovation.

5.1.2.2. Participants

About thirty participants will be recruited in the pilot. According to (Hertzog, 2008), 30-40 participants at a minimum will be needed in order to yield the confidence intervals and for the desired effect to be estimated accurately. In this pilot study, 60 participants will be recruited. The participants in the pilot testing will be of the same types as the target population of the innovation: They can be either male or female, aged 18 years or above with any type of psoriasis, no specific requirement on the educational level but should be able to communicate with Chinese.

As this measurement tool is self reported questionnaire, patients who are illiterate will be excluded.

5.1.2.3. Method

Patients who met the inclusive criteria will be invited to participate in the programme. Fact sheets with brief introduction of the programme will be given to
the participants. Consent for ethical approval will be obtained after the introduction before the assessment is carried out. Disease and treatment history will be asked and recorded for baseline information. The patients will then be asked to complete the Chinese version of Dermatology life Quality Index (DLQI) to assess the pre test quality of life level. After that, 4 sessions psychological program will be given to the participants. A handbook with psychological management technique and time table of program will be given to the patients. Participants will be asked to finish the DLQI after the program to ascertain their post test quality of life.

5.1.2.4. Time frame

The proposed time frame of the pilot test will last six weeks including four weeks’ implementation and two weeks for analysis of results and evaluation of the pilot test respectively. (See: Appendix 7)

5.1.2.5 Outcome measure

DLQI will be used to measure the change of the quality of life before and after the intervention. Patient attendance rate and nurse compliance with the protocol will be then measured in the pilot test to assess the acceptance of patients and nurses. Possible problems and barriers encountered will be used to help the guideline revision. Problems such as time, material, documentation, manpower and flow of program
will be evaluated to find out the weakness and strength of guideline. Cost effectiveness will be addressed for reference of budge plan in actual implementation.

5.2 Evaluation plan

After the pilot test is carried out, a summative evaluation plan will be developed to assess and evaluate the effects of the innovative program. The results can be a reference for future modification and improvement of the guideline before the actual large scale implementation. Evaluation also provides scientific data to quantify the effect of innovation to show the value of guideline so as to convince the stakeholder to support and sustain the changes. Patient’s outcome, healthcare provider outcome and system outcome will be measured to assess the effectiveness of innovation in the evaluation plan.

5.2.1. Outcome to be achieved

5.2.1.1 Patient outcomes

Primary outcome of patient outcome in this innovation is the improvement in the quality of life of psoriasis patients. To evaluate the quality of life, the DLQI will be used before and after the psychological management program. In order to assess any significant change after the program, the means of difference in pre test and post test will be compared. The quality of life level is expected to be lower which means
there is improvement in quality of life after the implementation of guidelines. Seven of the eleven reviewed studies showed the positive effect of the psychological management program on improving psoriasis patient’s quality of life level as the primary outcome of the evaluation plan (Kernick, 2000; Gradwell, 2002; Shikiar, 2006; Shikiar, 2003; Fortune, 2002; Sampogna, 2006; Korte, 2005). Four studies showed positive feedback in the program evaluation questionnaire, the patient’s satisfactory level will be the secondary outcome (Zachariac, 1996; Tausk, 1999; Skarpathiotakis, 2006; Fortune, 2004).

5.2.1.2 Healthcare provider outcomes

Health provider outcome focus on the front line nurses who implement the guideline. Currently, there are no guidelines on psychological care of psoriasis in our department. The guideline can equip and facilitate the nurse to help handling psoriasis patient’s psychological problem effectively. However, the nursing compliance of using the guideline can affect the effectiveness of the program. Therefore, we should investigate the satisfactory level of the nurses on applying the guideline in the clinical practice. Regular audit can be used to check the nursing compliance and implementation skills. For this pilot study, nurses should be interviewed to evaluate their satisfactory level and difficulties in using the guideline.

5.2.1.3 System outcome

System outcomes measure the cost saving by using the cost analyses. Cost
analyses concern the costs benefit analysis and cost effectiveness analysis (Polit & Beck, 2008). The cost effectiveness analysis looks at the impacts on the health outcome produced by the intervention. The health outcome cannot be measured in monetary terms (Portney, 2000). As it is not easily valued in dollar terms, the cost effectiveness analysis will not be conducted in the evaluation plan. On the other hand, the cost benefit analysis can be measured in monetary terms (Portney, 2000). In this innovation, the outcomes in cost benefit analysis include the reduced use of medications and consultation time after improving the patient’s quality of life. The material costs and benefits can be evaluated. The results can provide information to health care policymakers on how to allocate resources, and on the need for further development of the intervention advocates demonstrating the economic benefits.

5.2.2 Evaluation design

A pre and post test design will be used to evaluate both the patient outcome and system outcome. The healthcare provider outcome will be measured by a focus group interview. Patient satisfaction after the implementation of the programme will be measured by a self reported questionnaire.

5.2.3 Sample characteristic and size

All persons who have joined the program will be evaluated. The inclusive and exclusive criteria are the same as the pilot test (please refer to the above). The
sample size will be calculated on the primary outcome. DLQI score will be analyzed by independent t-test for the primary outcome. The test will be used for sample size calculation by setting the significance of 0.05 and power of 80%. The minimum sample size for evaluation is 52 patients. By taking into account the attrition rate of 10% to 20%, at least 60 patients will be recruited. The sampling takes three months by using convenience sampling.

5.2.4 Instrument

The Chinese version of the Dermatology quality of life index will be used to measure the change in quality of life levels of patients. This questionnaire is self-explanatory and is usually completed 10 items questions in one to two minutes. The maximum score of the index is 30. A higher score represent more quality of life impaired (Finlay & Khan, 1992)(See: appendix 8). A focus group interview in one hour will be used to evaluate the nurse’s satisfaction. In the interview, three aspects of questions, including compliance, difficulties and feedback, will be asked. The medication and consultation time will be recorded to evaluate the system outcome.

5.2.5. Data collection methods

First, the nurse will briefly introduce the content of the innovation to the patients who fulfill the inclusive criteria. Consent will be obtained after the introduction and
before the assessment is carried out. Disease history and DLQI score will be recorded for baseline information before the program. Intervention with psychological assessment and management with handbook will be arranged and be given to participants. The quality of life will be measured again after the whole program is completed. The total medical consultation time and the participant’s usage of medication will be recorded before and after the one month program. Data will be then analyzed by SPSS version 17. Program evaluation questionnaire will be given to patients after the program to evaluate patient’s satisfaction level and obtain feedback. Focus group interview will be carried out to collect feedback from relevant nurses. The interview will be recorded for further qualitative analysis.

5.2.6. When and Interval of measurement

For short term evaluation, demographic data, DLQI scores and disease history will be measured once each on the first day of program before the intervention and four weeks after the whole program. According to the review studies, change in quality of life level will be assessed after the program. The focus group interview will take one hour. For long term evaluation, the consultation time and usage of medication will be recorded every month to determine any change after the program.
5.2.7. Data analysis

Quantitative data will be entered and analyzed by Statistical Package for The Social Sciences (SPSS) version 17. Descriptive statistics including mean, standard deviations and frequency will be used to describe the demographic data and baseline assessment, the variables of DLQI and satisfaction of participants. To analyze the change in pre test scores and post test scores of DLQI, a two-tailed independent test will be used with p-value (level of significance =0.05) for the difference and the confidence interval will be reported. In the qualitative part, the focus group interview will be transcribed and summarized for the different questions. The feedback of nurses in focus group interview will be analyzed by content analysis.

5.2.8. Basis for an effective change of practice

The effectiveness will be determined by considering the patient's outcome, the healthcare provider outcome and the system outcome. According to the review studies, the quality of life is improved by approximately the decrease in 3 DLQI points scores with the difference at 0.27 being at the significant level of p<=0.05. (Gradwell, 2002).

The innovation will be considered effective when the reduction in DLQI is equal to or more than 3 points. In system outcome, consultation time was reduced by 33% (Gradwell, 2002) and usage of medications was also reduced by 20% after the program (Fortune, 2002). However, there are many factors can affect these two
variables. Concerning healthcare provider outcome, questions about the nurse’s feelings and satisfaction towards the guidelines will be asked and analyzed by qualitative analysis. The innovation will be considered effective when positive feedback is demonstrated.

5.2.9. Measures to sustain the change of practice

The result of evaluation will be reported to the decision maker for reference to decide whether accept, reject modify the guideline. Regular meetings to provide adequate communication can enhance the stakeholder’s confidence and acceptance of the change of practice. Nursing audit and recommendations can be provided to the front line nurse to help them improve the management skill of the program. Ongoing education should be provided to more front line nurses to ensure everyone has good understanding of the guideline.

5.3. Conclusion

In order to solve the psychological problems of psoriasis in current dermatology care, an evidence based guideline is developed. In this chapter, a well –designed implementation and evaluation plan are discussed. The information obtained from evaluating the patient outcome, healthcare provider outcome and system outcome can be important reference for further practice development.
REFERENCES


Retrieved December 1, 2011,


Appendix 1: Searching Engines

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| Total no of citation without overlapping | 8 |
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| Total no. of articles reviewed | 11 |

Notes: searching was limited to papers published in (1985-2011) with full text available and written in English
Appendix 2: Table of evidences of 11 studies


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<th>Comparison</th>
<th>Length of follow up</th>
<th>Outcome measures</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients with psoriasis in Aarhus. Fifty-one patients (19 men, 32 women; mean age, 39.6+/- 11.5 years). The patients were randomly assigned to (1) a treatment group or (2) a control group.</td>
<td>RCT (random blinded controlled manner)</td>
<td>1+</td>
<td>seven individual psychotherapy sessions consisted of the following elements: 1. Cognitive-behavioral stress-management 2. Relaxation training 3. Symptom control imagery training</td>
<td>Patients were randomly assigned to treatment group or a control group. Compare the beneficial effect on psoriassi activity of treatment group and control group</td>
<td>12-week</td>
<td>Primary: Psoriasis Activity: The Psoriasis Area Severity Index (PASI), The Total Sign Score (TSS) and Skin blood flow (LDBF). Secondary: Psychologic: The Brief Stress Questionnaire (BSQ), The Social Readjustment Scale (SRS), Beck’s Depression Inventory (BDI)</td>
<td>By using Mann Whitney U test: TSS and LDBF. The difference between the two groups in relative change in PASI scores did not reach statistical significance (p = 0.06). BSQ: The percent of patients showing reduced stress was greater in treatment group than in control group p&lt;0.05. By using Friedman: significant changes were seen in treatment group for PASI p&lt;0.05, TSS p&lt;0.05 and LDBF P&lt;0.01.</td>
</tr>
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<th>Length of follow up</th>
<th>Outcome measures</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adults with stable, chronic, plaque-type psoriasis. 5 patients were highly hypnotizable, 6 were moderately hypnotizable.</td>
<td>RCT Randomized, single-blind, controlled trial. (pilot study)</td>
<td>1+</td>
<td>Hypnosis with active suggestions of improvement including suggestions of relaxation and well being inherent to the induction procedure.</td>
<td>Compare the group receiving hypnosis with active suggestions of psoriasis improvement, and control group receiving neutral hypnosis.</td>
<td>3 months</td>
<td>Primary outcome: clinical severity of disease (PASI). Secondary outcome: Subject self assessment</td>
<td>Using Mann Whitney test: no significant difference in percent change in PASI score was seen comparing the two groups P&gt;0.1. By using Fisher’s exact test, self assessment scores yielded a statistically significant difference P=0.001 between two groups.</td>
</tr>
</tbody>
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<th>Outcome measures</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intervention group: 61% Female, 39% Male, mean age: 47.4 years</td>
<td>RCT (parallel)</td>
<td>1+</td>
<td>A structured training programme from our local hospital dermatology department over a period of 87 hours which include the direct tuition, background reading encompassing the treatment, education, and psychological support of patients. Patients were invited to attend a clinic where the nurse was able to offer as many consultations over a period of four months.</td>
<td>Patient receiving GP care and nursing consultation and control patient only received routine GP care.</td>
<td>4 months period</td>
<td>Primary outcome measure was the Dermatology Life Quality Index (DLQI). This instrument generates a score between zero (worst state) and 30 (best state). Secondary outcome: Simple qualitative data by inviting all subjects to describe on their follow-up questionnaire their response to the care received at the clinic. Outcomes were measured by post at zero and four months.</td>
<td>There was a significant improvement in the DLQI of 25% of patients (P&lt;0.01), this change was not significant when compared with the 9% improvement in the control group. There was a significant change in the clinical score when compared with the control group (P&lt;0.05) but no change in the Euroqol generic health measure.</td>
</tr>
<tr>
<td>Skin condition: 57% eczema, 35% psoriasis, 9% mixed. Control group: 52% Female, 48% Male, mean age: 51.7 years</td>
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<tr>
<td>Skin condition: 61% eczema, 37% psoriasis, 2% mixed.</td>
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<th>Comparison</th>
<th>Length of follow up</th>
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<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients allocated to normal care were generally older (mean 47 years vs. 32 years in the nurse group) and fell largely into the moderate or severe disease categories. Normal care: 47% male, 53% female. 47% psoriasis. Normal care + nurse: 39% male, 61% female, 45% psoriasis.</td>
<td>RCT (randomized, parallel-group study)</td>
<td>1+</td>
<td>In the normal care group, all patients received their normal consultation and follow-up with the dermatologist. In the nurse follow-up group, patients received a 20-min interview with a dermatology nurse specialist in addition to their initial consultation with the dermatologist.</td>
<td>The improvement in quality of life and patient knowledge between patients in normal care and patient receive normal care with nursing consultation.</td>
<td>6 weeks</td>
<td>Primary outcome measure: improvement in quality of life at 6 weeks, as assessed using the Dermatology Life Quality Index (DLQI). Secondary outcomes comprised a between-group comparison of patient knowledge at 6 weeks (patients’ understanding of their skin condition, their knowledge of how to apply treatments, and awareness of where to obtain further support and repeat prescriptions were assessed using a specifically designed questionnaire).</td>
<td>The between-group difference was 0.27 (95% confidence interval) 2.3 to 2.8, P =0.83). Patients who had seen the nurse were more likely to know how long they should apply treatment (P=0.05). There was a marked difference in patients’ understanding of how to obtain a repeat prescription (P =0.01) and from whom they could receive further support (P &lt; 0.001). Following the addition of this service, 33% of follow-up appointments with a doctor were cancelled in the nurse intervention group.</td>
</tr>
</tbody>
</table>

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<th>Patient characteristics (N= 83)</th>
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<th>Comparison</th>
<th>Length of follow up</th>
<th>Outcome measures</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>35% female, 65% male, 69% has pervious course of therapy at the centre. 30% received phototherapy and subset of this group received education at other centre. The majority of patients had psoriasis for 20years or less.</td>
<td>RCT</td>
<td>1-</td>
<td>Individual education sessions that include video, handouts, and one on one training with a nurse.</td>
<td>Compare the patients’ knowledge or awareness about psoriasis, emotional and psychological feeling before an after the intervention.</td>
<td>Not mentioned</td>
<td>By self-administered questionnaire including both quantitative and qualitative questions about the education. Assess the value of the education given at PERC and to determine if this education was effective in improving both patients’ understanding of their disease and their overall outlook on their disease.</td>
<td>The results for all of the topics included in the questionnaire are listed in Table 1. P values were &lt;0.001 for before and after groups for each topic.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Patient characteristics (N= 147)</th>
<th>Study type</th>
<th>Evidence level</th>
<th>Assessment instrument</th>
<th>Comparison</th>
<th>Length of follow up</th>
<th>Outcome measures</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients with a diagnosis of moderate to severe plaque psoriasis and an affected BSA of ≥ 5% for at least 1 year. The mean age of the patients enrolled in the trial was 44.2 years, two-thirds were male, and the preponderance were white. They received at least one dose of study medication at 18 sites in the United States and Canada.</td>
<td>RCT (randomized, double-blind, parallel group, placebo-controlled, multi-center clinical trials)</td>
<td>1++</td>
<td>Patient-reported outcomes (PROs) – the three PROs used in the trial: the DLQI; the general health-related QOL measure MOS Short Form 36 (SF-36) Health Survey [16]; and the general health status measure EuroQOL 5D (EQ-5D)</td>
<td>The clinical efficacy and safety of two doses of subcutaneously administered adalimumab vs. placebo for 12 weeks in the treatment of 147 patients with moderate to severe plaque psoriasis. This compares the validity and responsiveness to change in clinical status of PROs instruments at baseline and at 12 weeks.</td>
<td>12 weeks</td>
<td>Primary clinical outcomes: Psoriasis Area and Severity Index, Physician’s Global Assessment. Patient-Reported Outcome measures: (1) Dermatology Life Quality Index, (2) Short Form 36 health survey, (3) EuroQOL 5D</td>
<td>The reliability of the DLQI, as assessed by coefficient alpha, was 0.89 at baseline and 0.92 at Week 12, indicating that this is a highly reliable measure, and in line with previous findings. DLQI total score and changes in the PASI score (r = 0.69, p &lt; 0.001) and PGA (r = 0.71, p &lt; 0.001) approach the correlation between changes in the two clinical measures themselves (r = 0.75, p &lt; 0.001). In addition, the DLQI is the only one of the PRO measures to demonstrate equal responsiveness to PGA and PASI scores. The correlation between changes in the EQ-5D index score and the two clinical assessments was r = -0.57 (p &lt; 0.001) for changes in the PASI to r = -0.44 for changes in the PGA (p &lt; 0.001).</td>
</tr>
</tbody>
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<thead>
<tr>
<th>Patient characteristics (N=1095)</th>
<th>Study type</th>
<th>Evidence level</th>
<th>Assessment instrument</th>
<th>Comparison</th>
<th>Length of follow up</th>
<th>Outcome measures</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>The average age of the 498 subjects enrolled in Study A was 44.1 (s.d. = 12.0) and of the 597 subjects in Study B was 45.6 (s.d. = 12.7). Males comprised 72.3% of the sample in Study A and 64.8% of the sample in Study B. The baseline PASI scores for Study A and Study B were 18.84 (7.05) and 20.01 (8.35), respectively; and the baseline OLS scores for the two studies were 3.46 (0.63) and 3.31 (0.85), respectively. The subjects in both studies had moderate to severe psoriasis.</td>
<td>RCT (randomized, double-blind, parallel group, placebo-controlled, multi-center clinical trials)</td>
<td>1++</td>
<td>Four patient reported outcome measures were used in these studies: the PSA, DLQI, and two measures of itching.</td>
<td>Internal consistency reliability and construct validity were evaluated by comparison of the score of the patient reported outcome at baseline and at 12 weeks after the administration of efalizumab for the treatment of psoriasis.</td>
<td>12 weeks</td>
<td>Clinical Measures: (1)Psoriasis Area and Severity Index (PASI), (2)Overall Lesion Severity Scale (OLS), (3)Physician’s Global Assessment of Change (PGA). Patient-Reported Outcome Measures: (1)Psoriasis Symptom Assessment (PSA) Scale, (2)Dermatology Life Quality Index, (3)Itch Measures</td>
<td>The means, standard deviations, and reliability coefficients (Cronbach’s coefficient α) of the patient reported outcomes at baseline and 12 week data were available for 89.7–90.5% of the subjects in Study A and for 93.5–97.4% of the subjects in Study B. The internal consistency reliability coefficients of all the Patient-reported measures are satisfactory, ranging from approximately 0.86 to 0.95. The PSA frequency and severity scores correlate in the range of 0.59 to 0.63 with the DLQI total score at baseline and in the range of 0.78 to 0.79 at 12 weeks.</td>
</tr>
</tbody>
</table>
### Patient characteristics (N=93)

Patients from psoriasis-speciality clinic at Hope Hospital. Patients were aged between 21 and 69 years, duration with psoriasis ranged from 3 to 64 years, and clinical severity of disease as assessed by dermatologists on the PASI, showed a range of 3.2-18.1.

<table>
<thead>
<tr>
<th>Study type</th>
<th>Intervention</th>
<th>Comparison</th>
<th>Length of follow up</th>
<th>Outcome measures</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age- and sex-matched case controlled prospective study</td>
<td>Six session cognitive-behavioural programme. The duration of each session individual group session was 2.5 hours. The programme consisted of didactic teaching about the medical and biological basis of psoriasis—its treatments and effects and stress reduction techniques. Participants were encouraged to complete homework in relation to aspects of their individual perceptions of psoriasis.</td>
<td>Basis of a patient preference randomization, compare patients in Psoriasis Symptom Management Programme and patient only receive the standard care.</td>
<td>6 weeks and 6 months follow up.</td>
<td>Illness perception questionnaire (IPQ) measure the illness identity, perceptions of causation, timeline perceptions, beliefs in severity of consequences, perceptions of cure or control of the condition. Coping Strategies (COPE) Alexithymia (TSA-20)</td>
<td>Alexithymia: 30% in PSMP group, 55% in control group above the cut off on TAS-20, $X^2=7.32$, $p=0.007$. IPQ: repeated measures ANCOVA showed highly significant treatment group x time interaction, $F(2,64)=20.63$, $p=0.001$. COPE: ANCOVA revealed that there were no significant effects of the intervention on coping $F(2,64)=0.56$, $p=0.56$.</td>
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<thead>
<tr>
<th>Patient characteristics (N= 380)</th>
<th>Study type</th>
<th>Evidence level</th>
<th>Assessment instrument</th>
<th>Comparison</th>
<th>Length of follow up</th>
<th>Outcome measures</th>
<th>Result</th>
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<tbody>
<tr>
<td>Mean age was 44.3 years and 60% of the patients were male. The mean duration of disease was 12.4 years. The mean PASI score was 8.3 (SD 5.7) and the mean SAPASI was 15.0 (SD 10.2).</td>
<td>Cross-sectional study</td>
<td>2+</td>
<td>SF-36 scales</td>
<td>SF-36 scales scores of psoriasis patients and patient with other medical disease (Hypertension, DM, MI and depression and psychiatric illnesses.)</td>
<td>N/A</td>
<td>Primary outcome: Difference of SF-36 scores between psoriasis patients and patient with other medical problems. Secondary outcome: Correlation of SF-36 and other dermatology specific (Skindex-29, dermatology life quality index) and psoriasis specific instruments (psoriasis disability index, PDI and Impact of psoriasis questionnaire).</td>
<td>Highest correlation between PDI and DLQI with SF-36 scales were with these two scales (from 0.52 to 0.57). We also found a moderately high correlation between the SF-36 bodily pain (BP) and the Skindex-29 symptoms scale (r =0.60), between the SF-36 mental health (MH) and the Skindex-29 emotions scale (r = 0.53), social functioning (SF) in SF-36 and in Skindex-29 (r =0.57).</td>
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<tr>
<th>Patient characteristics (N=330)</th>
<th>Study type</th>
<th>Intervention</th>
<th>Comparison</th>
<th>Length of follow up</th>
<th>Outcome measures</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most patients had psoriasis for more than 10 years, and the mode of disease severity was moderate. 55.6% female, 44.4% male, mean age (SD)= 43.5 years</td>
<td>Prospective, initial clinical study.</td>
<td>The disease management programme consisted of a set of patient-centred interventions, such as disease education, disease management training, and psychological support, together with topical treatment. The programme included three, face-to-face consultations over a 2-month period. Additionally, patients were given study materials to take home, in the form of booklets, a videotape and/or a CD-ROM.</td>
<td>Before and after 2 months programme.</td>
<td>2 months</td>
<td>Patient satisfaction: A study-specific, seven-item questionnaire was employed. Adherence: A study-specific four-item questionnaire was employed. (a prerequisite for adherence), and overall adherence. Disease severity: A study-specific six-item questionnaire was employed to address overall severity, and the severity of specific symptoms, such as redness, scaling, itch and pain. Quality of life: The Skindex-29 and the EQ-5D were employed. The Skindex29 is a dermatology-specific questionnaire.</td>
<td>Changes were tested (test of no change) by T-tests (adherence, overall and symptom-specific disease severity and Skindex-29), and the McNemar test (EQ-5D). Tests were made on the total sample of patients. Adherence: all items P&lt;0.001. Disease severity: all items except “redness” P&lt; 0.001. Quality of life: all items of skindex 29 &amp; EQ-5D P &lt;0.001.</td>
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</table>

<table>
<thead>
<tr>
<th>Patient characteristics (N=93)</th>
<th>Study type</th>
<th>Evidence level</th>
<th>Intervention</th>
<th>Comparison</th>
<th>Length of follow up</th>
<th>Outcome measures</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients from psoriasis-specialty clinic at Hope Hospital. Patients were aged between 21 and 69 years, duration with psoriasis ranged from 3 to 64 years, and clinical severity of disease as assessed by dermatologists on the PASI, showed a range of 3.2-18.1.</td>
<td>Case control study</td>
<td>2++</td>
<td>Multidisciplinary management approach, the Psoriasis symptom management programme (PSMP): six-session cognitive behavioural programme. The duration of each session is 2.5 hours with six to eight patients. The programme consists of didactic teaching about the medical and biological basis of psoriasis (muscular relaxation training and cognitive techniques). Basis of a patient preference randomization, compare patients in Psoriasis Symptom Management Programme and patient only receive the standard care.</td>
<td>6 months</td>
<td>Primary outcome: Clinical severity of psoriasis: (Psoriasis area and severity index); Anxiety &amp; depression: (Hospital anxiety and depression scale); psoriasis related stress level and disability( psoriasis life stress inventory, psoriasis disability index). Secondary outcome: evaluation of the PSMP.</td>
<td>Clinical severity of psoriasis P=0.001, anxiety P=0.001, depression P=0.001, psoriasis related stress P=0.001 and disability P=0.04.</td>
<td></td>
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</tbody>
</table>
### Appendix3: Result of Critical Appraisal Skills Programme (CASP)

<table>
<thead>
<tr>
<th>Question/Citations</th>
<th>Zacharchie et al., 1996</th>
<th>Tausk et al., 1999</th>
<th>Kernick et al., 2000</th>
<th>Gradwell et al., 2002</th>
<th>Skarpathiotakis et al., 2006</th>
<th>Shikiar et al., 2003</th>
<th>Fortune et al., 2004</th>
<th>Fortune et al., 2002</th>
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<td>0.5</td>
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<tr>
<td>% of criteria fulfilled</td>
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<td>70%</td>
<td>70%</td>
<td>75%</td>
<td>50%</td>
<td>85%</td>
<td>85%</td>
<td>85%</td>
<td>70%</td>
<td>70%</td>
<td>80%</td>
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</table>

10 questions from the appraisal tool for RCT (CASP, 2011):

Y: Yes  
? : Can’t tell/ not applicable  
N: No

1. Did the study ask a clearly-focused question?  
2. Was this a randomized controlled trial and was it appropriately so?  
3. Were participants appropriately allocated to intervention and control groups?  
4. Were participants, staff and study personnel blind? To participants? Study group?  
5. Were all of the participants who entered the trial accounted for at its conclusion?  
6. Were the participants in all groups followed up and data collected in the same way?  
7. Did the study have enough participants to minimize the play of chance?  
8. How are the results presented and what is the main result?  
9. How precise are these results?  
10. Were all important outcomes considered so the results can be applied?  

Each scores 1 point, maximum 10 points for each article.  
Total score:  
<70%: Low quality paper; =/> 70%: Medium quality paper; >85%: High quality paper.  
(The scoring system was introduced by the author of this paper.)  
(Public Health Resources Unit, National Health Service, 2010)
Appendix 4a: Key to evidence statements (Levels of evidence)

1++ High quality meta-analyses, systematic reviews of RCTs, or RCTs with a very low risk of bias
1+ Well-conducted meta-analyses, systematic reviews, or RCTs with a low risk of bias
1- Meta-analyses, systematic reviews, or RCTs with a high risk of bias
2++ High quality systematic reviews of case control or cohort or studies
High quality case control or cohort studies with a very low risk of confounding or bias and a high probability that the relationship is causal
2+ Well-conducted case control or cohort studies with a low risk of confounding or bias and a moderate probability that the relationship is causal
2- Case control or cohort studies with a high risk of confounding or bias and a significant risk that the relationship is not causal
3 Non-analytic studies, e.g. case reports, case series
4 Expert opinion

(SIGN, 2008)
### Appendix 4 b: Quality assessment (Appraisal guideline were retrieved from Scottish Intercollegiate Guidelines Network. (2008))

#### Evidence level of Randomized controlled trials (RCT)

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<tr>
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</thead>
<tbody>
<tr>
<td>1.1 The study addresses an appropriate and clearly focused question</td>
<td>Purpose was adequately covered</td>
<td>Purpose was adequately covered</td>
<td>Purpose was adequately covered</td>
<td>Purpose was adequately covered</td>
</tr>
<tr>
<td>1.2 The assignment of subjects to treatment groups is randomized</td>
<td>Adequately covered</td>
<td>Adequately covered</td>
<td>Adequately covered</td>
<td>Adequately covered</td>
</tr>
<tr>
<td>1.3 An adequate concealment method is used</td>
<td>Not addressed</td>
<td>Not addressed</td>
<td>Not addressed</td>
<td>Well covered</td>
</tr>
<tr>
<td>1.4 Subjects and investigators are kept ‘blind’ about treatment allocation</td>
<td>Adequately covered</td>
<td>Adequately covered</td>
<td>Poorly addressed</td>
<td>Poorly addressed</td>
</tr>
<tr>
<td>1.5 The treatment and control groups are similar at the start of the trial</td>
<td>Adequately covered</td>
<td>Adequately covered</td>
<td>Adequately covered</td>
<td>Adequately covered</td>
</tr>
<tr>
<td>1.6 The only difference between groups is the treatment under investigation</td>
<td>Adequately covered</td>
<td>Adequately covered</td>
<td>Adequately covered</td>
<td>Adequately covered</td>
</tr>
<tr>
<td>1.7 All relevant outcomes are measured in a standard, valid and reliable way</td>
<td>Adequately covered</td>
<td>Adequately covered</td>
<td>Adequately covered</td>
<td>Adequately covered</td>
</tr>
<tr>
<td>1.8 What percentage of the individuals or clusters recruited into each treatment arm of the study dropped out before the study was completed?</td>
<td>Drop out rate: 13.7%</td>
<td>N/A (pilot study)</td>
<td>Drop out rate: 26%</td>
<td>Drop out rate: 1.5%</td>
</tr>
<tr>
<td>1.9 All the subjects are analysed in the groups to which they were randomly allocated (often referred to as intention to treat analysis)</td>
<td>Adequately covered</td>
<td>Adequately covered</td>
<td>Adequately covered</td>
<td>Adequately covered</td>
</tr>
<tr>
<td>1.10 Where the study is carried out more than one site, results are comparable for all sites</td>
<td>Adequately covered</td>
<td>Adequately covered</td>
<td>Adequately covered</td>
<td>Adequately covered</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Section 2: overall assessment of the study</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1 How well was the study done to minimize bias? Code ++, + or –</td>
</tr>
<tr>
<td>2.2 If coded as + or –, what is the likely direction in which bias might affect the study results?</td>
</tr>
<tr>
<td>2.3 Taking into account clinical considerations, your evaluation of the methodology used, and the statistical power of the study, are you certain that the overall effect is due to the study intervention?</td>
</tr>
<tr>
<td>2.4 Are the results of this study directly applicable to the patient group targeted by this guideline?</td>
</tr>
</tbody>
</table>

| General quality | Medium level | Medium level | Medium level | Medium level |
### Evidence level of Randomized controlled trails (RCT)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 The study addresses an appropriate and clearly focused question</td>
<td>Purpose was adequately covered</td>
<td>Purpose was well covered</td>
<td>Purpose was well covered</td>
</tr>
<tr>
<td>1.2 The assignment of subjects to treatment groups is randomized</td>
<td>Adequately covered</td>
<td>Well covered</td>
<td>Well covered</td>
</tr>
<tr>
<td>1.3 An adequate concealment method is used</td>
<td>Not reported</td>
<td>Not addressed</td>
<td>Not addressed</td>
</tr>
<tr>
<td>1.4 Subjects and investigators are kept ‘blind’ about treatment allocation</td>
<td>Not reported</td>
<td>Well covered</td>
<td>Well covered</td>
</tr>
<tr>
<td>1.5 The treatment and control groups are similar at the start of the trial</td>
<td>Adequately covered</td>
<td>Well covered</td>
<td>Well covered</td>
</tr>
<tr>
<td>1.6 The only difference between groups is the treatment under investigation</td>
<td>Poorly addressed</td>
<td>Well covered</td>
<td>Well covered</td>
</tr>
<tr>
<td>1.7 All relevant outcomes are measured in a standard, valid and reliable way</td>
<td>Adequately covered</td>
<td>Well covered</td>
<td>Well covered</td>
</tr>
<tr>
<td>1.8 What percentage of the individuals or clusters recruited into each treatment arm of the study dropped out before the study was completed?</td>
<td>Drop out rate: 17%</td>
<td>Drop out rate: 4.7%</td>
<td>Not applicable</td>
</tr>
<tr>
<td>1.9 All the subjects are analysed in the groups to which they were randomly allocated (often referred to as intention to treat analysis)</td>
<td>Poorly addressed</td>
<td>Well covered</td>
<td>Well covered</td>
</tr>
<tr>
<td>1.10 Where the study is carried out more than one site, results are comparable for all sites</td>
<td>Poorly addressed</td>
<td>Well covered</td>
<td>Well covered</td>
</tr>
</tbody>
</table>

### Section 2: overall assessment of the study

| 2.1 How well was the study done to minimize bias? Code ++, + or – | 1- | 1++ | 1++ |
| 2.2 If coded as + or -, what is the likely direction in which bias might affect the study results? | – | + | + |
| 2.3 Taking into account clinical considerations, your evaluation of the methodology used, and the statistical power of the study, are you certain that the overall effect is due to the study intervention? | The effect sizes were small and results were not presented unclearly. | Yes, The statistic method was described clearly. | Yes, The statistic method was described clearly. |
| 2.4 Are the results of this study directly applicable to the patient group targeted by this guideline? | Yes, because it described teaching materials in detail which is useful. | Yes | Yes |

**General quality**

Low level  | High level  | High level
Evidence level of non-randomized controlled trials.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 The study addresses an appropriate and clearly focused question</td>
<td>Purpose was well covered</td>
<td>Purpose was well covered</td>
<td>Purpose was well covered</td>
<td>Purpose was well covered</td>
</tr>
<tr>
<td>1.2 The cases and controls are taken from comparable populations</td>
<td>Well covered</td>
<td>Adequately addressed</td>
<td>Adequately addressed</td>
<td>Well covered</td>
</tr>
<tr>
<td>1.3 The same exclusion criteria are used for both cases and controls.</td>
<td>Well covered</td>
<td>Adequately addressed</td>
<td>Adequately addressed</td>
<td>Well covered</td>
</tr>
<tr>
<td>1.4 What percentage of each group (cases and controls) participated in the study?</td>
<td>Cases: 43% Control: 57%</td>
<td>Cases: 43% 2% Control: 56.8%</td>
<td>Not applicable</td>
<td>Cases: 48% Control: 52%</td>
</tr>
<tr>
<td>1.5 Comparison is made between participants and non-participants to establish their similarities or differences.</td>
<td>Well covered</td>
<td>Adequately addressed</td>
<td>Adequately addressed</td>
<td>Well covered</td>
</tr>
<tr>
<td>1.6 Cases are clearly defined and differentiated from controls.</td>
<td>Well covered</td>
<td>Adequately addressed</td>
<td>Adequately addressed</td>
<td>Well covered</td>
</tr>
<tr>
<td>1.7 It is clearly established that controls are non-cases</td>
<td>Well covered</td>
<td>Adequately addressed</td>
<td>Adequately addressed</td>
<td>Well covered</td>
</tr>
<tr>
<td>1.8 Measures will have been taken to prevent knowledge of primary exposure influencing case ascertainment</td>
<td>Adequately addressed</td>
<td>Not reported</td>
<td>Not reported</td>
<td>Adequately addressed</td>
</tr>
<tr>
<td>1.9 Exposure status is measured in a standard, valid and reliable way.</td>
<td>Adequately addressed</td>
<td>Adequately addressed</td>
<td>Adequately addressed</td>
<td>Adequately addressed</td>
</tr>
<tr>
<td>1.10 The main potential confounders are identified and taken into account in the design and analysis</td>
<td>Adequately addressed</td>
<td>Not reported</td>
<td>Not reported</td>
<td>Not reported</td>
</tr>
</tbody>
</table>

Section 2: overall assessment of the study

| 2.1 How well was the study done to minimize bias? Code ++,+ or – | 2++ | 2+ | 2+ | 2++ |
| 2.3 Taking into account clinical considerations, your evaluation of the methodology used, and the statistical power of the study, are you certain that the overall effect is due to the study intervention? | Yes | Yes | Yes | Yes |
| 2.4 Are the results of this study directly applicable to the patient group targeted by this guideline? | Yes | Yes | Yes | Yes |

General quality

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
</tr>
</tbody>
</table>
Appendix 5: Budget Plan

Time Interval: one month

Estimated number of patients: 189

<table>
<thead>
<tr>
<th>Cost</th>
<th>HKD $</th>
<th>Saving</th>
<th>$$ estimated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use of nurses’ time on psychotherapy training program</td>
<td>8 hours x130x2</td>
<td>Reduced the consultation time</td>
<td>5197</td>
</tr>
<tr>
<td>Fee of training program</td>
<td>800x2</td>
<td>Reduce use of phototherapy</td>
<td>650</td>
</tr>
<tr>
<td>Use of conference room</td>
<td>0</td>
<td>Reduce use of topical medications</td>
<td>3351</td>
</tr>
<tr>
<td>Use of nurses’ time in implementing the program (estimated 2 hours)</td>
<td>130x2x8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Photocopying of handbook</td>
<td>500</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>6260</strong></td>
<td><strong>9198</strong></td>
<td></td>
</tr>
</tbody>
</table>

Cost/benefit ratio = 0.68

The salary is based on the median income of a registered nurse at Department of Health

The salary is based on the median income of medical officer at Department of Health

Cost of topical medications is based on the retail selling price from pharmacy internal record of dermatology clinic in Department of Health
### Appendix 6: Grade of Recommendation

**SING grading system: Grade of Recommendation**  
(Scottish Intercollegiate Guidelines Network, 2008)

<table>
<thead>
<tr>
<th>Grade</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>At least one meta-analysis, systematic review, or RCT rated as 1++, and directly applicable to the target population; or A systematic review of RCTs or a body of evidence consisting principally of studies rated as 1+, directly applicable to the target population, and demonstrating overall consistency of results.</td>
</tr>
<tr>
<td>B</td>
<td>A body of evidence includes studies rated as 2++, directly applicable to the target population, and demonstrating overall consistency of results; or Extrapolated evidence from studies rated as 1++ or 1+.</td>
</tr>
<tr>
<td>C</td>
<td>A body of evidence including studies rated as 2+, directly applicable to the target population and demonstrating overall consistency of results; or Extrapolated evidence from studies rated as 2++.</td>
</tr>
<tr>
<td>D</td>
<td>Evidence level 3 or 4; or Extrapolated evidence from studies rated as 2+.</td>
</tr>
<tr>
<td>D(GPP)</td>
<td>Recommended best practice based on the clinical experience of the guideline development group.</td>
</tr>
</tbody>
</table>

**GPP**: good practice points

**Appendix 7: Time Frame**

<table>
<thead>
<tr>
<th>Time</th>
<th>Activities</th>
<th>Aims</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week1</td>
<td>Meeting with Senior nurse, trainers. Research team formed.</td>
<td>To identify problem</td>
</tr>
<tr>
<td>Week2</td>
<td>Second meeting with taskforce to confirm the details of innovation</td>
<td>To identify problem and explore need for change</td>
</tr>
<tr>
<td>Week3-4</td>
<td>Meeting with department head and senior nursing officer</td>
<td>Presentation on cost, benefit, risk and outcome; hand in proposal to seek for approval and identify problem.</td>
</tr>
<tr>
<td>Week 5-6</td>
<td>Meeting with research team Production of education video and information leaflets or handout by task force.</td>
<td>Preparation of materials before training to the front line nurses.</td>
</tr>
<tr>
<td>Week7</td>
<td>Meeting with front line nurses</td>
<td>To introduce the innovation to front line nurses</td>
</tr>
<tr>
<td>Week 8</td>
<td>Training to front line nurse, 8 hours workshop with handbook will be given.</td>
<td>To provide training for the nurses</td>
</tr>
<tr>
<td>Week 9</td>
<td>Start pilot study and recruitment of participants</td>
<td>To introduce the program and invite patients to participate.</td>
</tr>
<tr>
<td>Week 10-13</td>
<td>Implementation of guidelines and keep regular meeting with task force and tea gathering with front line nurses.</td>
<td>To further refine innovation and to collect feedback according to outcome of pilot study</td>
</tr>
<tr>
<td>Week14-16</td>
<td>Evaluation period</td>
<td>To assess the outcomes of the use of guidelines</td>
</tr>
</tbody>
</table>
Appendix 8: 皮膚學生活品質問卷

醫院編號: 日期: 分數:  
姓名:  
地址:  
診斷:  

此份問卷的目的是要測量過去一星期內，您皮膚的問題對您的生活所造成的影響程度。請針對每一個題目，在一個方格□中打✓。

1. 過去一星期內，您的皮膚有多癢、疼痛或灼熱？
   - 非常多 □
   - 有很多 □
   - 有一点 □
   - 完全沒有 □

2. 過去一星期內，您因為皮膚的問題而感到多尷尬或不自在？
   - 非常多 □
   - 有很多 □
   - 有一点 □
   - 完全沒有 □

3. 過去一星期內，您皮膚的問題干擾您外出購物、照顧家庭或庭園的程度有多少？
   - 非常多 □
   - 有很多 □
   - 有一点 □
   - 完全沒有 □
   - 不適用於我 □

4. 過去一星期內，您皮膚的問題影響您所穿著的衣物的程度有多少？
   - 非常多 □
   - 有很多 □
   - 有一点 □
   - 完全沒有 □
   - 不適用於我 □

5. 過去一星期內，您皮膚的問題影響您社交或休閒活動的程度有多少？
   - 非常多 □
   - 有很多 □
   - 有一点 □
   - 完全沒有 □
   - 不適用於我 □

6. 過去一星期內，您皮膚的問題在您做任何運動時造成困擾的程度有多少？
   - 非常多 □
   - 有很多 □
   - 有一点 □
   - 完全沒有 □
   - 不適用於我 □

7. 過去一星期內，您皮膚的問題曾讓您無法工作或讀書嗎？
   - 有 □
   - 沒有 □
   - 不適用於我 □
   - 多 □
   - 有一點 □
   - 完全沒有 □

如果是「沒有」，過去一星期在工作或讀書時，您皮膚的問題有多少？

8. 過去一星期內，您皮膚的問題困擾您與伴侶或親朋好友的關係的程度有多少？
   - 非常多 □
   - 有很多 □
   - 有一点 □
### 9. 过去一星期内，您皮肤的问题造成任何 **性方面困扰** 的程度有多少？

<table>
<thead>
<tr>
<th>完全没有</th>
<th>不适用</th>
<th>不适用</th>
</tr>
</thead>
<tbody>
<tr>
<td>非常多</td>
<td></td>
<td></td>
</tr>
<tr>
<td>多</td>
<td></td>
<td></td>
</tr>
<tr>
<td>有一点</td>
<td></td>
<td></td>
</tr>
<tr>
<td>完全没有</td>
<td>不适用</td>
<td>不适用</td>
</tr>
</tbody>
</table>

### 10. 过去一星期内，您因为 **治疗** 皮膚问题而有的困擾程度有多少（例如：使您的家裡變得髒亂或佔用時間）？

<table>
<thead>
<tr>
<th>完全没有</th>
<th>不适用</th>
<th>不适用</th>
</tr>
</thead>
<tbody>
<tr>
<td>非常多</td>
<td></td>
<td></td>
</tr>
<tr>
<td>多</td>
<td></td>
<td></td>
</tr>
<tr>
<td>有一点</td>
<td></td>
<td></td>
</tr>
<tr>
<td>完全没有</td>
<td>不适用</td>
<td>不适用</td>
</tr>
</tbody>
</table>

请检查您是否已经回答每一个问题。谢谢您。

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Appendix 8: DERMATOLOGY LIFE QUALITY INDEX

<table>
<thead>
<tr>
<th>Hospital No:</th>
<th>Date:</th>
<th>Score:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Address:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diagnosis:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The aim of this questionnaire is to measure how much your skin problem has affected your life OVER THE LAST WEEK. Please tick one box for each question.

1. Over the last week, how itchy, sore, painful or stinging has your skin been? [Very much, A lot, A little, Not at all]

2. Over the last week, how embarrassed or self conscious have you been because of your skin? [Very much, A lot, A little, Not at all]

3. Over the last week, how much has your skin interfered with you going shopping or looking after your home or garden? [Very much, A lot, A little, Not at all]

4. Over the last week, how much has your skin influenced the clothes you wear? [Very much, A lot, A little, Not at all]

5. Over the last week, how much has your skin affected any social or leisure activities? [Very much, A lot, A little, Not at all]

6. Over the last week, how much has your skin made it difficult for you to do any sport? [Very much, A lot, A little, Not at all]

7. Over the last week, has your skin prevented you from working or studying? If "No", over the last week how much has your skin been a problem at work or studying? [Very much, A lot, A little, Not at all]

8. Over the last week, how much has your skin created problems with your partner or any of your close friends or relatives? [Very much, A lot, A little, Not at all]
9. Over the last week, how much has skin caused any sexual difficulties?

10. Over the last week, how much of a problem has the treatment for your skin been, for example by making your home messy, or by taking up time?

Please check you have answered EVERY question. Thank you.
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