

# Perakuan keaslian penulisan

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**Kesan Terapi “*Applied Progressive Muscle Relaxation Training*” kepada Paras Kemurungan, Kerisauan, Keresahan dan Kualiti Hidup di Kalangan Pesakit Kanser Prostat.**

Bidang Penyelidikan: **Epidemiologi**

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**The Impact of the Applied Progressive Muscle Relaxation Training on the Levels of Depression, Anxiety, Stress and Health-Related Quality of Life among Prostate Cancer Patients**

Field of Study: **Epidemiology**

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# Abstrak

## Pengenalan

Tujuan utama kajian ini adalah untuk menentukan tahap keberkesanan *applied progressive muscle relaxation training* (APMRT) pada paras kemurungan, kebimbangan, tekanan dan asas kualiti hidup (HRQOL) di kalangan pesakit kanser prostat.

## Metodologi

Ini adalah kajian percubaan kuasi-eksperimen dengan pengukuran berulang yang dijalankan di dua pusat perubatan pengajian tinggi di Kuala Lumpur. Kajian dijalankan dalam tempoh selama enam bulan. Kumpulan intervensi adalah pesakit kanser prostat yang mendapat rawatan susulan di Pusat Perubatan Universiti Malaya (PPUM) dan kumpulan perbandingan adalah pesakit kanser prostat yang mendapat rawatan susulan di Pusat Perubatan Universiti Kebangsaan Malaysia (PPUKM).

Maklumat asas tentang ciri-ciri sosio-demografi, sejarah penyakit kronik, amalan gaya hidup pesakit, permasalahan pembuangan kencing semasa, status kanser dan rawatan untuk kanser prostat telah di ambil melalui temuduga bersemuka dan kajian dari rekod perubatan. Permarkahan bagi kemurungan, kebimbangan dan tekanan telah dinilai menggunakan Skala Kemurungan, Kebimbangan Tekanan (DASS) dan pemarkahan untuk tahap asas kualiti hidup (HRQOL) telah dinilai dengan menggunakan soal selidik Tinjauan Kesihatan Ringkas dengan 36 item (SF-36). Penilaian telah dikumpulkan melalui soal selidik yang di jawab oleh pesakit itu sendiri.

## Keputusan

Sejumlah dari 193 pesakit layak menyertai kajian ini, di mana 109 pesakit dari PPUM dan 84 pesakit dari PPUKM. Di ke dua-dua kumpulan tersebut, pesakit adalah di kalangan mereka yang berumur 70 hingga 80 tahun, bangsa Cina, berkahwin, tinggal dengan ahli keluarga atau rakan kongsi mereka dan mempunyai pendidikan sekolah menengah. Tiada perbezaan yang signifikans ( $p > 0.05$ ) pada ciri-ciri sosio-demografi, sejarah penyakit kronik, amalan gaya hidup pesakit, aduan kencing dan status kanser semasa kecuali untuk rawatan bagi kanser prostat di mana kumpulan perbandingan, mereka banyak mendapat rawatan lanjut dengan suntikan zoladex ( $p < 0.001$ ) dan dalam kumpulan intervensi, mereka lebih banyak mendapat rawatan lanjut suntikan lucrine ( $p < 0.001$ ). Hipertensi adalah penyakit kronik yang tertinggi (67.6%) dan kerap kencing pada waktu malam adalah aduan kencing (87.3%) di kalangan pesakit kanser prostat

Pada permulaan, hanya 77 pesakit dari PPUM dan 78 pesakit dari PPUKM telah bersetuju untuk mengambil bahagian dalam kajian ini. Pada akhir kajian, hanya 70 pesakit dari PPUM dan 68 pesakit dari PPUKM telah melengkapkan kajian

memberikan kadar penyiapan sebanyak 90.9% bagi kumpulan intervensi dan 88.2% bagi kumpulan perbandingan.

Selepas pemberian APMRT, terdapat peningkatan skor yang signifikan dalam mengurangkan tahap kebimbangan ( $p < 0.001$ ) dan tekanan ( $p < 0.001$ ) tetapi tidak pada kemurungan ( $p = 0.784$ ). APMRT juga meningkatkan skor yang signifikan pada skor ringkasan komponen mental (MCS) ( $p = 0.019$ ) dan jumlah skor keseluruhan kualiti hidup (QOL) ( $p = 0.045$ ) tetapi tidak pada skor ringkasan komponen fizikal ( $p = 0.656$ ). Walau pun APMRT telah menunjukkan perubahan yang signifikan dalam perubahan kebimbangan, tekanan, MCS dan skor keseluruhan kualiti hidup, APMRT hanya memberikan kesan yang rendah disebabkan *effect sizes* yang kecil.

### **Kesimpulan**

Walaupun keputusan daripada kajian ini tidak menunjukkan signifikan secara klinikal, APMRT telah menunjukkan kesan yang memberangsangkan kepada masalah psikologi dan kualiti hidup di kalangan pesakit kanser prostat. Justeru itu, APMRT perlu dikekalkan untuk memastikan semua peningkatan dalam kualiti yang berkaitan kesihatan umum serta tekanan psikologi di kalangan pesakit kanser prostate boleh dikekalkan pada masa hadapan.

# Abstract

## Introduction

The main aim of this study was to determine the impact of the applied progressive muscle relaxation training (APMRT) on the levels of depression, anxiety, stress and general health-related quality of life (HRQOL) among prostate cancer patients.

## Methodology

A quasi-experimental trial with repeated measurements conducted at two tertiary medical centres in Kuala Lumpur with a follow up period for six months. The intervention group comprised patients who were being followed up at University Malaya Medical Centre (UMMC) and the comparison group were patients who were followed up at Universiti Kebangsaan Malaysia Medical Centre (UKMMC).

Baseline information on socio-demographic characteristics, history of chronic diseases, lifestyles practices of the patients, current urinary complaints and cancer status and treatment for prostate cancer were collected via face to face interview and review of the medical records. The scores for depression, anxiety and stress were assessed by using Depression Anxiety Stress Scales (DASS) and the scoring for HRQOL was assessed by using Short Form Health Survey consisting 36 items (SF-36). The assessments were achieved through self-administered questionnaires.

## Results

There were 109 patients from UMMC and 84 patients from UKMMC who were eligible for the study. In both groups, majority of them were: in the age group 70 to 80 years, Chinese, male were married, staying with their family members or partner and had secondary school education. The baseline socio-demographic characteristics, history of chronic diseases, lifestyle practices of the patients, current urinary complaints, current cancer status were comparable ( $p>0.05$ ) in both groups except for the treatment for the prostate cancer. In comparison group, more patients (79.8%) were treated with zoladex injection ( $p<0.001$ ) and in intervention group, more patients (42.2%) treated with luteal injection ( $p<0.001$ ). Hypertension was the highest co-morbidity besides prostate cancer (67.6%) and nocturia was the commonest urinary complaint among the patients (87.3%).

Only 77 patients from UMMC and 78 patients from UKMMC eventually agreed to participate in the study. At the end of the study, there were 70 patients from UMMC and 68 patients from UKMMC who completed the study. The completion rates were 90.9% for intervention group and 88.2% for the comparison group.

After implementation of the APMRT, it was observed that there were significant improvement for anxiety ( $p<0.001$ ) and stress ( $p<0.001$ ) but not for depression ( $p=0.784$ ). APMRT also significantly increased in the score for mental component

summary (MCS) ( $p=0.019$ ) and overall total quality of life (QOL) ( $p=0.045$ ) but not for physical component summary (PCS) ( $p=0.656$ ). Even though APMRT was found to be statistically significant in improving anxiety, stress, MCS and total QOL levels, the impact of the APMRT was low due to small effect sizes.

## **Conclusion**

lthough the results were not clinically significant, APMRT shows promising effect on the psychological problems and quality of life among prostate cancer patients. The practice of APMRT should be maintained to ensure that all improvements in general health-related quality of life as well as psychological distress among prostate cancer patients can be sustained in the future.

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# Publications

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## Conferences:

1. The General Health Related Quality of Life and Depression Status among prostate Cancer Patients in Two University Hospitals in Kuala Lumpur, Malaysia. Mohamad Rodi Isa, Moy Foong Ming, Azad Hassan Abdul Razack, Zulkifli Md Zainuddin, Nor Zuraida Zainal. 6th Asia Pacific Organization for Cancer Prevention, Taipei, Taiwan, 20th – 23rd March 2014. Presented as Poster.
2. The impact of Applied Progressive Muscle Relaxation Training on the Health Related Quality of Life among Prostate Cancer Patients – A quasi Experimental Trial. Mohamad Rodi Isa, Moy Foong Ming, Azad Hassan Abdul Razack, Zulkifli Md Zainuddin, Nor Zuraida Zainal. 1st Asia Pacific Clinical Epidemiology and Evidence –Based Medicine Conference. Kuala Lumpur, Malaysia. 6th – 8th July 2012. Presented as oral.
3. Study of Stress Status and its Relationship with General Health Related Quality of Life among Prostate Cancer Patients in Two Tertiary Centers in Kuala Lumpur. Mohamad Rodi Isa, Moy Foong Ming, Azad Hassan Abdul Razack, Nur Zuraida Zainal. 6th Asia Pacific Organization for Cancer Prevention, Kuching Sarawak, Malaysia. 26th – 29th April 2012. Presented as poster.
4. A study of Stress Status and its Relationship with General Health Related Quality of Life among Prostate Cancer Patients in a Tertiary Centre in Kuala Lumpur. Mohamad Rodi Isa, Moy Foong Ming, Azad Hassan Abdul Razack, Zulkifli Md Zainuddin, Nor Zuraida Zainal. International Health Conference IIUM 2011, Kuantan, Pahang, Malaysia. 7th – 8th December 2011. Presented as oral
5. Prevalence of Anxiety and Its Relationship with General Health Related Quality of Life among Prostate Cancer Patients in a Tertiary Medical Centre in Kuala Lumpur. Mohamad Rodi Isa, Moy Foong Ming, Azad Hassan Abdul Razack, Nur Zuraida Zainal. The 1st International Symposium on Health Research & Development and The 3rd West Pacific Regional Conference on Public Health 2011, Bali Indonesia. 16th – 18th November 2011. Presented as oral
6. The impact of applied progressive muscle relaxation training to the level of depression, anxiety, stress and quality of life among prostate cancer patients – A case protocol of quasi experimental study. Mohamad Rodi Isa, Moy Foong Ming, Saini Jeffery, Azad Hassan Abdul Razack, Nor Zuraida Zainal, Zulkifli

Md Zainuddin. 43rd APACPH, Seoul, Republic of Korea. 20th – 22nd October 2011. Presented as Poster.

7. The quality of life among prostate cancer patients in University Malaya Medical Centre (UMMC) – A cross sectional study. Mohamad Rodi Isa, Moy Foong Ming, Azad Hassan Abdul Razack. 43rd APACPH, Seoul, Republic of Korea. 20th – 22nd October 2011. Presented as oral.
8. The prevalence of depression and its associated factors among prostate cancer in University Malaya Medical Centre (UMMC). Mohamad Rodi Isa, Moy Foong Ming, Azad Hassan Abdul Razack, Nor Zuraida Zainal . 6th Public Health Conference, Seremban, Negeri Sembilan, Malaysia. 11th – 13th July, 2011. Presented as poster.

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2. The impact of applied progressive muscle relaxation training on the levels of depression, anxiety and stress among prostate cancer patients: A quasi-experimental study. **Mohamad Rodi Isa**, Foong Ming Moy, Azad Hassan Abdul Razack, Zulkifli Md Zainuddin, Nor Zuraida Zainal. Asia Pacific Journal of Cancer Prevention 2013;14(4): 2237-2242.  
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3. Anxiety Status and its Relationship with General Health Related Quality of Life among Prostate Cancer Patients in Two University Hospitals in Kuala Lumpur, Malaysia. **Mohamad Rodi Isa**, Foong Ming Moy, Azad Hassan Abdul Razack, Zulkifli Md Zainuddin, Nor Zuraida Zainal. Iranian J Publ Health 2013; 42(3): 240 – 248  
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4. General health related quality of life and its associated factors among prostate cancer patients in two tertiary medical centers in Kuala Lumpur, Malaysia: A cross-sectional study. **Mohamad Rodi Isa**, Moy Foong Ming, Azad Hassan Abdul Razack, Zulkifli Md Zainuddin, Nor Zuraida Zainal. Asia Pacific Journal of Cancer Prevention 2012; 13(12): 5999 - 6004.  
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# Abbreviations

3D-CRT	3-Dimensional Conformal Radiation Therapy
ACTH	Adrenocorticotrophic Hormones
ADH	Anti-diuretic Hormone
ADHD	Attention-deficit Hyperactivity Disorder
ADT	Androgen Deprivation Therapy
AJCC	American Joint Committee on Cancer
ANOVA	Analysis of Variance
ANS	Autonomic Nervous System
APA	American Psychiatric Association
APMRT	Applied Progressive Muscle Relaxation Training
ASR	Adjusted Standardization Rate
AVP	Arginine-Vasopression
BAI	Beck Anxiety Inventory
BDI	Beck Depression Inventory
BMI	body mass index
BP	Bodily Pain
BPD	Borderline Personality Disorder
BT	Brachytherapy
CAM	Complementary and Alternative Medicine
CCV	Quality of life: Cuestionario de Calidad de Vida QL-CAAFex
CBT	Cognitive Behavioral Theory
CR	Crude Rate
CRH	Corticotrophin Releasing Hormone
CSAI-2	Competitive State Anxiety Inventory-2
CSAQ	Cognitive Manifestations of Anxiety
DAS	Dental Anxiety Scale
DASS-21	Depression Anxiety Stress Scales-21
DRE	Digital Rectal Examination
EBRT	Electron Beam Radiation Therapy
EMAS	Endler Multidimensional Anxiety Scale
EORTC	The European Organization for Research and Treatment of Cancer
EPIC	Expended Prostate Cancer Index Composite
ERSPC	European Randomised Study of Screening for Prostate Cancer
FACT	Functional Assessment of Cancer Therapy-Colorectal scale
FACT-G	Functional Assessment of Cancer Therapy Scale (General)
FACT-P	Functional Assessment of Cancer Therapy Scale (Prostate)
F2IP	F2-Isoprostanes
GH	General Health
GHQ-12	General Health Questionnaire
GP	General Practitioner
HADS	Hospital Anxiety and Depression Scale
HAQ	Hierarchical Anxiety Questionnaire
HPA	Hypothalamic-pituitary-adrenal
HPAA	Hypothalamic-pituitary-adrenal Axis
HRQOL	Health Related Quality of Life
HTLV-1	Human T-cell Lymphotropic Virus type I
HUI3	Health Utilities Index

HUSM	Hospital Universiti Sains Malaysia
ICD	International Classification of Disorders
IMRT	Intensity Modulated Radiation
LC/NE	Locus Ceruleus-Norepinephrine
LHRH	Luteinising Hormone-releasing Hormone
MBM	Mind-body medicine
MBT	Mind-body therapy
MCS	Mental Coefficient Summary
MH	Mental Health
MLR	Multiple Linear Regression
MOH	Ministry of Health
OR	Odds Ratio
PCI	UCLA-Prostate Cancer Index
PCOS	Prostate Cancer Outcomes Study
PCS	Physical Coefficient Summary
PF	Physical Function
PIN	Prostatic Intraepithelial Neoplasia
PLCO	Prostate, Lung, Colorectal and Ovarian Cancer Screening Trial
PMR	Progressive Muscle Relaxation
PRL	Prolactin
PSA	Prostatic Specific Antigen
PSAD	PSA Density
PSADT	PSA Doubling Time
PSAT	PSA Density of Transition Zone
PSAV	PSA Velocity
PSS	Perceived Stress Scale
PTSD	Post-Traumatic Stress Disorder
QALY	Quality of Life Adjusted Life
QOL	Quality of Life
RE	Role-Emotional
RP	Role-Physical
SEER	Surveillance Epidemiology and End Results
SF	Social Functioning
SF-36	RAND 36-Item Health Survey
SLR	Simple Linear Regression
SNS	Sympathetic Nervous System
SPSS	Statistical Package for Social Sciences
STAI	State-Trait Anxiety Inventory
STPI	State-Trait Personal Inventory sub-scale Anxiety
TRUS	Trans-rectal Ultrasound
UICC	International Union Against Cancer
UK	United Kingdom
UKMMC	Universiti Kebangsaan Malaysia Medical Centre
UMMC	University of Malaya Medical Centre
US	United States of America
VASS	Visual Analogue Scale Stress
VT	Vitality
WHO	World Health Organization