

Project Title

Subsyndromal Depression: Prevalence and its associated factors

Project Lead and Members

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Organisation(s) Involved

National Healthcare Group Polyclinics

Healthcare Family Group(s) Involved in this Project

Medical, Clinical Research Unit

Applicable Specialty or Discipline

Mental Health, Primary Care

Project Period

Start date: 13 Dec 2021

Completed date: 7 Apr 2022

Aims

1. To determine the prevalence of subsyndromal depression in a primary care population.
2. To explore factors associated with subsyndromal depression.

Background

See poster appended/ below

Methods

See poster appended/ below

Results

See poster appended/ below

Lessons Learnt

1. Persisting with our prior recruitment strategy to obtain an age-stratified sample was tough as a longer study duration was required. However, perseverance and regular assurance of team members allowed us to complete the study with a more robust methodology and better representation of our study population.
2. A lot of coordination was required in conducting a large cross-sectional study. A cohesive core team that met up regularly and providing frequent updates and communication with all the team members on the ground were essential for successfully completing the study over the four-month period.

Conclusion

See poster appended/ below

Additional Information

Singapore Health & Biomedical Congress (SHBC) 2022: Singapore Primary Care Award (Oral category) – (Merit Award)

Project Category

Care Continuum

Primary Care, Population Health, Mental Health

Applied/ Translational Research

Quantitative Research

Keywords

Major Depressive Disorder(MDD), Depression, Subsyndromal Depression (SSD), Mental Health, Population Health, Mental Health

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Subsyndromal Depression

Prevalence and its associated factors

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INTRODUCTION

- **Subsyndromal depression (SSD)** is defined as any two or more simultaneous symptoms of depression, present for most or all of the time, at least 2 weeks in duration, associated with evidence of social dysfunction, occurring in individuals who do not meet the criteria for diagnoses of minor depression, major depression, and/or dysthymia¹. It is also called minor depression, subclinical depression and subthreshold depression²
- SSD is diagnosed from depressed mood with at least 1 symptom of Major Depressive Disorder (MDD), but not fulfilling the criteria of MDD, and the presence of clinically significant distress or deficit lasting at least 2 weeks³. A Patient Health Questionnaire Mood Scale (PHQ-9) between 5 and 9 is also indicative of SSD⁴
- SSD is associated with elevated rates of comorbid mood, anxiety, and personality disorders, as well as the development of a new-onset MDD and anxiety disorder⁵
- Subclinically depressed patients treated by psychoeducation, physical exercise and enhanced treatment as usual comparably improved depressive symptoms, diabetes distress, self-management of diabetes, health-related quality of life and metabolic control⁶
- A survey of people aged 60 and above in Singapore found that SSD was more common in individuals with a lower socioeconomic status and was often associated with cognitive impairment, anxiety, poor physical health, and poor social functioning⁷

Table 1: Demographic Characteristics (N=3,450)

	Minimal depression (N=2,575)	Subsyndromal depression (N = 572)	Moderate-severe depression (N = 303)	Total (N = 3,450)
Age (as of 2022)				
>= 65 years old	1,025 (39.8%)	85 (14.9%)	33 (10.9%)	1,143 (33.1%)
40-64 years old	1,025 (39.8%)	219 (38.3%)	77 (25.4%)	1,321 (38.3%)
< 40 years old	525 (20.4%)	268 (46.9%)	193 (63.7%)	986 (28.6%)
Gender				
Male	1,404 (54.5%)	304 (53.1%)	143 (47.2%)	1,851 (53.7%)
Female	1,171 (45.5%)	268 (46.9%)	160 (52.8%)	1,599 (46.3%)
Ethnicity				
Chinese	1,870 (72.6%)	357 (62.4%)	170 (56.1%)	2,397 (69.5%)
Malay	365 (14.2%)	125 (21.9%)	81 (26.7%)	571 (16.6%)
Indian	232 (9.0%)	61 (10.7%)	37 (12.2%)	330 (9.6%)
Others	108 (4.2%)	29 (5.1%)	15 (5.0%)	152 (4.4%)

Table 2: Multivariable logistic regression[†] of factors associated with SSD

Independent Variables	Adjusted Odds Ratio (95% CI [‡])	p-value	Independent Variables	Adjusted Odds Ratio (95% CI [‡])	p-value
Age (as of 2022)			Current marital status		
>= 65 years old	REF [†]		Currently married	REF	
40-64 years old	2.12 (1.54 to 2.91)	<0.001	Never married / Single	0.99 (0.77 to 1.29)	0.96
< 40 years old	3.29 (2.24 to 4.85)	<0.001	Separated/divorced/widowed/others	1.56 (1.12 to 2.17)	<0.01
Gender			Highest level of education attained		
Male	REF				
Female	1.00 (0.81 to 1.23)	0.99	Main work status, over the last 12 months		No statistically significant findings
Ethnicity			Socioeconomic status		
Chinese	REF		EQ-5D-5L score	0.58 (0.36 to 0.94)	0.03
Malay	1.36 (1.05 to 1.76)	0.02	EQ-5D health state (VAS)	0.98 (0.97 to 0.99)	<0.001
Indian	1.21 (0.88 to 1.66)	0.25	Overall Social Support (mMOS-SS)	1.00 (0.99 to 1.00)	0.02
Others	1.26 (0.81 to 1.97)	0.31			

1. [†]Outcome: subsyndromal depression (1) vs minimal or moderate-severe depression (0)
2. [‡]CI – confidence interval; REF – reference group; p<0.05 is considered statistically significant

CONCLUSION

1. There is high prevalence of subsyndromal depression
2. There is an urgent need to reduce disability adjusted life year especially among the young as Singapore's strategic resource is its human capital
3. Future studies are needed to explore ways for improving mental health as well as the longitudinal relationship between SDD and self-harm & MDD

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OBJECTIVE

1. To determine the prevalence of subsyndromal depression in a primary care population.
2. To explore factors associated with subsyndromal depression

METHODOLOGY

1. This is a cross-sectional study where interviewer-assisted questionnaire was administered to participants
2. Stratified sampling by age was used to select participants
3. Multivariable logistic regression was used to identify the factors associated with SSD

RESULTS

- We conducted a complete-case analysis on 3,450 patients (mean age: 52.5 years old; Male = 53.7%; Chinese = 69.5%) (Table 1).
- The prevalence of subsyndromal depression was **16.6%** (572 out of 3,450).
- Participants aged 21-39 (OR=3.29, CI=2.24-4.85) and 40-64 (OR=2.12, CI=1.54-2.91) were more likely to have SSD when compared with those >=65 years old.
- Those of Malay ethnicity (OR=1.36, CI=1.05-1.76) had higher odds of SSD compared to Chinese.
- Compared to married individuals, those separated/divorced/widowed had higher odds of SSD (OR=1.56, CI=1.12-2.17).

REFERENCES

1. Judd LL, Rapaport MH, Paulus MP, Brown JL. Subsyndromal symptomatic depression: A new mood disorder? The Journal of Clinical Psychiatry. 1994;55:18-28.
2. Rodríguez, M.R., Nuevo, R., Chatterji, S. et al. Definitions and factors associated with subthreshold depressive conditions: a systematic review. *BMC Psychiatry* 12, 181 (2012). <https://doi.org/10.1186/1471-244X-12-181>
3. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders [Internet]. Fifth Edition. American Psychiatric Association; 2013 [cited 2022 Sep 27]. Available from: <https://psychiatryonline.org/doi/book/10.1176/appi.books.9780890425596>
4. Volt HP, Stirnweil J, Kasper S, Möller HJ, Selfritz E. Subthreshold depression – concept, operationalisation and epidemiological data. A scoping review. *International Journal of Psychiatry in Clinical Practice*. 2022 Jun 23;1-15.
5. Laborde-Lahoz P, El-Gabalawy R, Kirwin J, Kirwin PD, Sareen J, Pietrzak RH. Subsyndromal depression among older adults in the USA: prevalence, comorbidity, and risk for new-onset psychiatric disorders in late life. *Int J Geriatr Psychiatry*. 2015 Jul;30(7):677-85.
6. Pibernik-Okanović M, Hermanns N, Ajduković D, Kos J, Prašek M, Sekerija M, et al. Does treatment of subsyndromal depression improve depression-related and diabetes-related outcomes? A randomised controlled comparison of psychoeducation, physical exercise and enhanced treatment as usual. *Trials*. 2015 Jul 15;16:305.
7. Chuan SK, Kumar R, Matthew N, Heok KE, Pin NT. Subsyndromal depression in old age: clinical significance and impact in a multi-ethnic community sample of elderly Singaporeans. *Int Psychogeriatr*. 2008 Feb;20(1):188-200.