

Yoga Foundation Program Evaluation

Yoga Classes for Sydney's Homeless and Disadvantaged Persons

December 2018

Primary Investigator: Dr Geoff Lyons, Clinical Psychologist and Research Consultant.

Contact details: +61 438 987 578; geoff@inspiritpsychology.com.au

Contents

xecutive summary	3
Introduction	4
Method	5
Participants	5
Demographics & Yoga practice	5
Mental health effects of yoga	5
Interview questions	6
Procedure	6
Data analysis	6
Results	6
Participants' demographics & mental health	6
Reasons for attending yoga classes	7
Home practice	8
Benefits of yoga classes	9
Barriers to engagement	10
Mental health effect of yoga classes	10
Discussion	13
Limitations	13
Conclusion	13

Executive summary

The Yoga Foundation is a Sydney-based not-for-profit organisation that provides free yoga classes to homeless and disadvantaged persons in the Sydney region. The Yoga Foundation provides specialised classes to a range of organisations including Redfern Mental Health, Mission Australia, the Ozanam Learning Centre (OLC), St Vincent's Hospital (Caritas ward), and Richmond PRA's Buckingham House and Flowerdale Cottage. The aim of the Yoga Foundation classes are to reduce symptoms of anxiety and depression in its class participants.

The prevalence of homeless and people "at-risk" of homelessness in the Australian community has increased by 14% in the last 5 years and by 30% in New South Wales. This population has high rates of mental illness and low levels of help seeking behaviours. The management of this population is a significant challenge for the community and Australian Government. Not-for-profit community providers such as the Yoga Foundation make up a large portion of the support services for these people.

This study clarified the demographics and mental health needs of disadvantaged persons who attend the Yoga Foundation's community yoga classes. This was done through a cross-sectional quantitative survey completed by 32 class attenders as well as a semi-structured clinical interview completed by 14 attenders.

The results of the study included:

- The three main reasons for class attendance was for physical health and fitness, relaxation and to manage mental health.
- Mental illness was common with 66.7% previously having and 60.6% currently having mental health disorder
- Substance use was not common in the sample, which is contrary to what is found in these
 populations in the broader the empirical literature
- Participants reported feeling significantly less stressed, depressed and anxious after the yoga classes
- Mental health benefits were the most frequently reported benefit of the yoga classes by participants
- Very few barriers to engaging with the yoga classes were reported. Those that were reported were things such as having trouble locating the classes and being too depressed to attend
- A large portion of participants (43%) reported being more confident to engage in other support services after attending the Yoga Foundation classes

Overall, the data collected suggests that the Yoga Foundation classes are a good self-help strategy for managing mental health in homeless and disadvantaged persons. The classes service quite complex clients but appear to provide real mental health benefits. Clients report leaving these classes in a more stable psychological state than when they arrive and experiencing ongoing psychological and physical benefits.

Introduction

Homelessness is a growing problem in Australia and occurs when a person does not have access to safe, adequate or secure shelter. Approximately 116,427 Australians were homeless in 2016, representing a 14% increase since 2011. Of these, 37,715 homeless people were located in New South Wales which is a 37% increase since 2011¹. This population is associated with significantly greater risk of substance use disorder, physical and mental health problems, social disengagement and violence. They are also higher uses of public services, such as health and justice services, than the general population.^{2,3}

There is a great deal of variability in the living situation and health needs of homeless persons. They may be living on the street, in improvised dwellings, emergency accommodation (e.g. shelters), supported accommodation (e.g. hostels), severely overcrowded dwellings, or "bed hopping" with friends or acquaintances¹. In addition, many people in the community may live in semi-stable accommodation and be at high-risk of homeless. Childhood adversity, mental illness, drug use, psychiatric hospitalisation, economic disadvantage, interpersonal difficulties, and domestic and family violence are some of the many complex risk factors for homelessness. "At-risk" persons with these difficulties may move in and out of the homeless category and at times access similar support services.^{4,5}

Homeless persons are a vulnerable population with higher rates of psychological disorders and distress than the general community. It has been estimated that 73% of Sydney's homeless men and 81% of women meet criteria for at least one psychological disorder. The most common disorders are alcohol use disorder, drug abuse, mood disorder (e.g. depression), anxiety disorder and schizophrenia. Exposure to trauma in this population is also high with over 90% of the Sydney's homeless experiencing at least one traumatic incident in their lifetime, compared to a prevalence rate of approximately 57% in the general community. Other studies have also reported significantly high levels of psychological distress in homeless populations.

Homeless persons can have low levels of help seeking behaviour. 9,10 Often the main source of psychiatric support for these people is hospital emergency departments with little service engagement outside of times of crisis. 9 Along with high levels of psychological distress, homeless persons are also prone to restricted emotional awareness and expression which can impair problem-solving and help-seeking behaviours. 10 There may be many reasons why help seeking behaviours are low in this population (e.g. lack of finances or health insurance, lack of knowledge, lack of transport) but difficulty regulating the anxiety associated with service engagement is likely to be one. Teaching homeless persons to regulate their distress and understand their emotions may contribute to overall wellbeing and improve attitudes towards engaging in supportive services.

As a result of their complex health issues and lack of stable housing, homeless persons present serious challenges to healthcare providers. Interventions for homeless persons typically consist of housing services, case management, counselling services, and structured group sessions. Very little research has been conducted on the use of interventions for health and wellbeing in homeless populations;^{11,12} however, some early studies suggest these typical interventions are beneficial for reducing alcohol consumption^{11,12} and psychological distress.¹²

The Yoga Foundation is a Sydney-based not-for-profit organisation that provides free yoga classes to homeless and disadvantaged persons in the Sydney region with the intention to reduce symptoms of anxiety and depression. The Yoga Foundation provides specialised classes to a range of organisations including Redfern Mental Health, Mission Australia, the Ozanam Learning Centre (OLC), St Vincent's Hospital (Caritas ward), and Richmond PRA's Buckingham House and Flowerdale Cottage. A total of 8

classes per week are provided across these community organisations reaching between 12 and 30 disadvantaged, mentally ill, homeless or at risk persons per week.

Yoga is a holistic mental health intervention that uses physical stretches, breathing techniques, relaxations, meditation as well as psychological, ethical and spiritual teachings for the promotion of wellbeing. Empirical research suggest yoga can assist in the treatment of depression, ^{13,14} anxiety, ¹⁵ stress, ¹⁶⁻¹⁸ trauma, ¹⁹ sleeping difficulties ^{20,21} and substance use disorders. ²²⁻²⁴

Many of the relaxation, breathing and meditation practices taught in yoga are identical to those used in evidence-based psychotherapies, including cognitive-behavioural therapy. Yoga therefore is a cost-effective self-help strategy for teaching people emotional regulation and wellness skills. To date, little is known about the use of community yoga with disadvantaged populations. This includes the people who attend community yoga classes, the reasons for attendance, the perceived benefits of classes and the barriers to engagement. Clarifying these points will help the Yoga Foundation refine and optimise its outreach services to the homeless and at-risk population of Sydney.

Project aims:

This project has two broad aims;

- 1. To clarify the demographics, mental health status and needs of homeless and at-risk persons attending The Yoga Foundation classes
- 2. To explore relationships between Yoga Foundation class attendance, wellbeing and attitudes towards service engagement in homeless and at-risk populations

Method

Participants

Participants were 32 homeless and at-risk persons aged 18 years and over who attended Yoga Foundation classes over a 12-month period. These classes were held across five community mental health service centres in Sydney including Redfern Mental Health, Mission Australia, the Ozanam Learning Centre (OLC), St Vincent's outpatient group, and Richmond RPA. All 32 participants completed a cross-sectional survey while 14 also took part in a semi-structured interview about their experience of yoga.

Demographics & Yoga practice

Data for this study was collected via a 48-item survey. Questions in this survey assessed demographics (gender, age, education, marital status, employment status, ethnicity, type of residency, recipient of government benefits, spiritual/religious identity), reasons for attending yoga classes, number of classes attended in the last month, the length of time practicing yoga, days practicing yoga in private in the last month.

Mental health effects of yoga

Six items retrospectively assessed participants' state stress, depression and anxiety immediately before and after class (e.g. "Before/after class how much do you feel...stressed/anxious/ depressed"). Eleven items were used to assess participants' perceived benefits of yoga.

Two items assessed participants' substance use in the last 14 days. Four items assessed previous and current mental health diagnoses and current psychotropic medication use. In addition, psychological distress in the last 14 days was assessed by a modified Kessler-6 (K6) scale. The K6 is an abbreviated version of the Kessler 10 scale, which is a commonly used to assess psychological distress. The K6 asks participants to indicate the degree to which they have felt sad, nervous, restless, hopeless, everything

Yoga Foundation program evaluation: Yoga for homeless and disadvantage persons_22/12/18

an effort, worthless and angry. Two additional items were added to assess anger and loneliness based on the literature with homeless populations. The K6 has been shown to have good internal consistency ($\alpha = .89$). The original K6 assesses symptoms in the last 4 weeks, however, for this study this was modified to be within the last two weeks.

Interview questions

Participants taking part in the semi-structured interview component of the study were asked the following questions: "Why do you come to these free yoga classes?"; "What benefits have you experienced from the yoga classes?"; "What negative things have you experienced from the yoga classes?"; "What things make it hard for you to come to participate in these classes?"; Do you practice any of the yoga skills outside of class? How?"; "Has yoga influenced your willingness to engage with community support services?".

Procedure

Yoga Foundation yoga teachers and associates were trained in recruitment and data collection by the study's researchers. These Yoga Foundation research assistants then held recruitment meetings at the end of yoga community classes where they would explain the study and invite class attenders to participate. Those wishing to participate were provided with a hard copy survey to complete. Research assistants remained present to help them complete the survey. At the completion of the survey the research assistants would also invite the participant to take part in a second component of the study, the semi-structured interview. Participants who volunteered to be interviewed were interviewed on site by research assistants at a time of their convenience, usually directly after class and giving their consent. Participants were compensated for their time with a \$20 gift voucher: one for both the survey and interview. The study was approved by the Australia College of Applied Psychology, Human Research Ethics Committee (HREC).

Data analysis

Participant demographics, mental health history, reasons for yoga class attendance, and attitudes towards yoga class were explored through descriptive data analyses. Spearman's correlations were used to determine associations between features of yoga practice and psychological wellbeing. Wilcoxon-Signed Ranks tests were used to determine changes in states of stress, anxiety and depression before and after class. In addition, qualitative data was transcribed and coded before themes and subthemes were elicited.

Results

Participants' demographics & mental health

A total of 32 participants participated in the study and completed the survey. This consisted of 19 females and 13 males with an average age of 56.26 years. The majority of participants were single (75.0%) or divorced/separated (21.9%), unemployed (43.8%), receiving welfare payments (90.6%) and living in an apartment or townhouse (58.1%). Mental health problems were common in the sample with 66.7% having previously been diagnosed with a mental health disorder and 60.6% having a current diagnosis. Irrespective of whether people had a formal diagnosis, 48.5%% reported experiencing symptoms of depression, 54.5% reported problems with anxiety, 18.2% believed they had drug and/or alcohol problems and 27.3% reported other various symptoms such as trauma and intellectual disability. Current substance use behaviours were low in the sample. 16.5% reported using alcohol and 12.1% used cannabis in the 14 days prior to participating in the research. Heroin, ice, amphetamines, cocaine and other drugs were also low with all have a prevalence in the sample of 3.1% (i.e. each category of substance had just one participant using it).

Table 1. Participant demographics

Age in years (M,SD)	56.26 (12.31)
Gender (%)	
Female	19 (59.4%)
Male	13 (40.6%)
Living arrangement (%)	
Apartment/townhouse	18 (58.1%)
House	6 (18.8%)
Other	7 (21.9%)
Welfare recipients (%)	
Yes	29 (90.6%)
No	2 (6.3%)
Missing	1 (3.1%)
Employment status (%)	
Unemployed	14 (43.8%)
Casual	3 (9.4%)
Part time	5 (15.6%)
Other	9 (28.1%)
Unemployed	14 (43.8%)
Missing	1 (3.1%)
Education (%)	, ,
Primary or less	1 (3.1%)
Secondary	18(56.3%)
Vocational Qualification	7 (21.9%)
Undergraduate	4 (12.5%)
Postgraduate	1 (3.1%)
Missing	1 (3.1%)
Marital status (%)	, ,
Single	24 (75.0%)
Divorced / separated	7 (21.9%)
Widowed	1 (3.1%)
Ethnicity (%)	, ,
Indigenous/Torres Strait Islander	2 (6.3%)
Anglo-Saxon Australian	16 (50.0%)
Other	14 (43.8%)
Spirituality (%)	
Religious	14 (43.8%)
Spiritual	10 (31.3%)
Atheist	1 (3.1%)
Unsure	3 (9.4%)
Other	3 (9.4%)
Missing	1 (3.1%)

Reasons for attending yoga classes

Lifetime practice of yoga varied greatly in the sample from 14 days to 40 years with an average of 3,305 days (SD = 4,506.55). Similar reasons for attending yoga were seen between the study's cross-sectional survey and the interviews. The cross-sectional survey found that participants attended yoga for physical health (40%), relaxation (26.7%), mental health (20%), socialisation (6.7%) and spirituality

(3.3%). The interviews found most people attended the yoga classes to gain some sense of relaxation (36%) or for health benefits (36%). Additionally, several interviewed participants reported attending the yoga classes as a method of managing their mental health (29%). Finally, 7% of interviewed participants attended to socialise, pass the time or out of curiosity.

Home practice

About half (57%) of the interviewed sample reported doing some form of home yoga practice. Twenty-seven percent (29%) of participants reported practicing on a daily basis. Forty-three percent (43%) of participants practiced asana at home, 21% practiced breathing techniques and 7% practiced meditation. Two participants (14%) provided responses that suggested they had a broad conceptualisation of yoga. For example, when asked if they practice yoga outside of the classes they answered in the affirmative and then gave something like daily walking as their example of their daily yoga practice.

Table 2. Interviewees reasons for attending the yoga classes

Theme & subtheme	n (%)	Quote
Relaxation	5 (36%)	"To help me relax and for my health."
		"Because I enjoy yoga and enjoy the feeling I have after I've
Harlis O fitares	F (200)	finished. I feel more relaxed and less fuzzy"
Health & fitness	5 (36%)	"To feel healthy, to look healthy. To exercise all my bones and my tissues and my muscles, and that's very important to
		me for my wellbeing."
- Fatigue	1 (7%)	"Every day I feel tired. I want to do some movement to help
		my body."
- Arthritis	1 (7%)	"Because I have a very, very bad arthritis and it helps."
Mental health	4 (29%)	"The main benefit I'm looking for is to manage my mental
		health issues."
		"To help me with my mental health problems."
- Holistic	3 (21%)	"To relax my mind, my soul, my body"
		"Stretching and to keep my body fit and well and my mind fit and well.
- Depression	1 (7%)	"When I first started I was very depressed and very stressed
		and I heard yoga was good for relaxation and calming
		everything and I thought that I would try it."
- Stress	1 (7%)	As above
Pass time	1 (7%)	"I've got nothing else to do in my life. Its empty."
Social support	1 (7%)	"[Because], people can help you out."
Curious	1 (7%)	"Just to experiment and see how I might fit or what it would be like."

n = 14

Table 3. Responses to the question "Do you practice yoga outside of class?"

Theme	n (%)	Quotes
Yes	8 (57%)	
Daily practice	4 (29%)	"Yes, I do stretching and twisting and bending every morning."
Asana	6 (43%)	"Yeah, just stretching. Different postures."
Breathing	3 (21%)	"I just do breathing. The breathing."
Meditation	1 (7%)	"Probably the meditation. I'm also doing a mindfulness class. And I do lots of walking"
No	2 (14%)	•
Confused responses	2 (14%)	"Actually, every morning I follow my ritual of exercise and I go for walk from here to the Opera House and come back."
		"Every morning before I get out of my bed I do two long deep breaths."

n = 14

Benefits of yoga classes

The reported benefits of the yoga classes could be grouped into three themes: physical wellbeing, mental health and social wellbeing. The most common theme was mental health benefits which was reported by 12 of the studies 14 interviewed participants (86%). Subthemes were a general improvement in multiple mental health symptoms (36%), helpful in the management of depression and anxiety (14%) and stress (14%). Physical wellbeing was the second most endorsed theme (79%). Four participants (29%) reported that the yoga classes were helpful for managing pain or arthritis. Relaxation, improved sleep and improved mobility were all reported by 21% of the sample. The third broad theme identified in the data was social benefits with 21% of the sample reporting this. Participants were also asked about their confidence to engage in opportunities for social support. Overall six (43%) of participants reported being more confident to engage in other social activities and support services after trying the community yoga classes.

Table 4. Reported benefits of Yoga

Theme	Quantity	Example quotes
Physical Wellbeing Improved sleep	11 (79%) 3 (21%)	"Sleep better. I feel good."
Reduced pain/arthritis	4 (29%)	"Well, I do feel I get less pain in the body." "Because [of the yoga] my arthritis is really very changing." "[The yoga] has helped my physical pain. I have sore muscles and when I do this I have less pain."
Improved mobility	3 (21%)	"[Because of the yoga] I can move. I can move." "Yes it does [help]. Um moving all the joints, moving all the organs, stretching, bending, twisting."
Relaxation	3 (21%)	"[Because of yoga I am] relaxed, relaxed, relaxed."

Weight loss	1 (7%)	"I lost a little bit of weight."
Look fit & healthy	1 (7%)	"I look and feel healthier doing yoga."
Mental Health	12 (86%)	
Mixed mental health symptoms	5 (36%)	"It helps with mental wellbeing. It helps you to relieve anxiety and depression."
Anxiety and depression	2 (13%)	"Helps me to manage the anxiety and depression disorders that I have. Immediately after the class and on an ongoing basis."
Stress management	2 (14%)	"So it helps me de-stress."
Reduced schizophrenic symptoms	1 (7%)	"I'm less schizophrenic."
Concentration	1 (7%)	"I find that after the class I'm a lot clearer. Not so fuzzy and I can concentrate on my chores a bit better."
Socialisation	3 (21%)	
Be with others	2 (14%)	"And its class participation. It's been with other people as well."

Barriers to engagement

Participants reported few barriers to engaging in the community yoga classes. Only three of the 14 participants interviewed could identify a barrier (21%). This included being unfamiliar with getting to the yoga classes (n = 1,7%) ("I don't really know the way to the class"), depression reducing motivation to engage in classes (n = 1,7%) ("Sometime the depression can make it difficult to get out of bed, to be motivated, to do all the things I need to do to come to the yoga classes") and having other commitments (n = 1,7%) ("I need to do some work placement for my TAFE [college] course and that'Il be on [the days when yoga is run]"). Similarly, participants listed few negative experiences from the yoga class. Only two participants were able to identify negative effects of yoga which were having minor cramps (n = 1) and "Feeling a bit strange afterwards" (n = 1). Fourteen (14) participants reported no negative effects of the yoga classes.

Mental health effect of yoga classes

Quantitative mental health and class attendance data from the cross-sectional survey was analysed to further understand the relationship between Yoga Foundation class attendance and participants' wellness. This included an examination of state affect before and after class and correlations between class attendance and psychological distress.

The effect of yoga class on state affect immediately before and after class was measured with non-parametric analyses because the data was not normally distributed. A series of repeated measures Wilcoxon Signed-Ranks test indicated that participants felt less anxious (pre M (SD) = 2.33 (1.37); post M (SD) = 1.50 (0.86), Z = -3.48, p < .001) depressed (pre M (SD) = 2.13 (1.31); post M (SD) = 1.53 (0.78), Z = -3.08, p < .002), and stressed (pre M (SD) = 2.53 (1.38); post M (SD) = 1.52 (0.63), Z = -3.68, p < .000) immediately after their yoga class.

Spearman's correlations found that the number of classes attended in the past month was negatively correlated with the modified K6 item assessing lethargy, fatigue or anhedonia "everything was an effort" ($r_s = -.45$, p = .01). Also frequency of current private yoga practice was moderately correlated

with the modified K6 items of anger (r_s = -.44, p = 0.02) and restlessness (r_s =-.37, p =.05); however, years of lifetime yoga practice was not correlated with any measures of psychological distress. A total yoga practice score was created by summing participants private practice in the last month with their total number of classes attended in the same period. This total yoga practice score was negatively correlated with sadness (r_s = -.40, p = .04), nervousness (r_s = -.39, p = .05), restlessness (r_s = -.48, p = .01), worthless (r_s = -.40, p = .03), anger (r_s = -.56, p =.00) and feeling unsupported (r_s = -.45, p = .02) (Table 5).

Table 5. Correlations between Yoga practice and K6 indicators of wellness

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Number of days practice life time	1													
2. Frequency private practice	.13	1												
3. Class attended last month	23	.14	1											
4. Total practice	.12	.93	.38	1										
5. Feeling so sad	.05	35	23	40*	1									
6. Feeling nervousness	16	26	18	39*	79	1								
7. Feeling fidgety	02	37*	23	48*	79	86	1							
8. Feeling hopeless	04	19	14	24	81	67	62	1						
9. Feeling everything is an effort	.17	09	45*	26	64	52	51	57	1					
10. Feeling worthless	.09	31	30	40*	66	51	60	82	60	1				
12. Feeling anger±	07	44*	20	56*	56	47	55	57	61	74		1		
13. Feeling loneliness±	01	06	23	29	34	55	42	42	56	38		39	1	
14. Feeling unsupported±	04	18	27	45*	21	39	20	32	47	34		50	.62	1
11. Total K6	.10	30	31	43*	90*	-86*	87*	86*	76*	.81*	1	68*	.53*	.34

^{*}p < .05. \pm These items were supplemental items that are not part of the published K6 or K10. They were included as exploratory constructs.

Discussion

This study demonstrates that mental health issues were highly prevalent in people attending the Yoga Foundation classes with 66.7% of the participants having a past mental health diagnosis and 60.6% a current diagnosis. Anxiety, depression, schizophrenia, bipolar, borderline, OCD as well as complex trauma were common. Irrespective of a formal diagnosis, almost half of the participants identified as having depressive symptoms, whereas more than half believed that they experienced anxiety related symptoms. These findings are consistent with previous research which indicated a high prevalence of mental health issues in this vulnerable group. Furthermore, almost a third of participants from the current study indicated that they experience some forms of physical ailment. These conditions add further complexity to their clinical presentation. They also demonstrate the highly complex population the Yoga Foundation classes are servicing.

This study tested the hypothesises that attending Yoga Foundation yoga classes would be negatively correlated with psychological distress and positively correlated with wellbeing in a sample of homeless and at risk of homeless community members. The data provided support this hypothesis. Significant reductions state depression, anxiety and stress were reported immediately after participation in the yoga classes. Many participants interviewed also explained that the classes were very helpful in reducing their stress levels and managing their mental health. Additionally, the quantitative data suggested that yoga practice (both class attendance and private practice) was negatively associated with sadness, nervousness, fidgety, worthless, anger and feeling unsupported.

The study also explored whether the yoga classes influenced participants' socialisation. This can be a major barrier to treatment engagement in this population and so it seemed reasonable to investigate whether the socialisation experience through the yoga classes generalised to engagement with other support services. Only one participant identified socialisation as one a reasons for attending the yoga classes, suggesting it may not have been a much as a motivated as assumed, but certainly increased confidence to engage in services due to the yoga classes was reported by six of the participants (43%). This provides some preliminary support for the hypothesis that engaging the Yoga Foundation classes may increase help-seeking behaviours in this vulnerable population.

Limitations

There are some limitations within the current study. Firstly, the study only had 32 participants, however recruitment difficulties were expected when working with this vulnerable, transient population. Secondly, the participants seemed more functional than typically described in the homeless literature. In particular, at the time of conducting this study, none of the participants were living on the street and their levels of substance use were lower than what has been typically reported in the literature.²⁹ How well can the results from this study generalise to a more severe homeless population who are living on the street remains unclear.

Conclusion

Sydney's homeless and at-risk persons are a vulnerable population that experience considerable hardship. Providing adequate and cost-effective support to these persons is a considerable challenge for Government and the broader Sydney community. This study has shown that the Yoga Foundation provide a valuable service to the community by alleviating some of the distress this populations experiences, increasing their wellness and their likelihood of engaging in other support services. The Yoga Foundation classes provide a very cost-effective treatment option to this population with few barriers to client engagement.

References

- **1.** ABS. Census of Population and Housing: Estimating homelessness, 2016: http://www.abs.gov.au/ausstats/abs@.nsf/lookup/2049.0Media%20Release12016
- **2.** Flatau P, Zaretzky K. The Economic Evaluation of Homelessness Programs. *The European Journal of Homelessness*. 2008;2:305-320.
- **3.** Zaretzky K, Flatau P, Brady M. What is the (Net) Cost to Government of Homelessness Programs. *Australian Journal of Social Issues.* 2008;43:231-254.
- **4.** Caton CL, Dominguez B, Schanzer B, et al. Risk factors for long-term homelessness: Findings from a longitudinal study of first-time homeless single adults. *American journal of public health*. 2005;95:1753-1759.
- **5.** Shelton KH, Taylor PJ, Bonner A, van den Bree M. Risk factors for homelessness: evidence from a population-based study. *Psychiatric Services*. 2015;60:465-472.
- **6.** Teesson M, Hodder T, Buhrich N. Psychiatric disorders in homeless men and women in inner Sydney. *Australian and New Zealand Journal of Psychiatry*. 2004;38:162-168.
- 7. O'Donnell M, Varker T, Phelps A. *Literature review: The nature of the relationship between traumatic events in people's lives and homelessness.* East Melbourne: Australian Centre for Posttraumatic Mental Health; 2012.
- **8.** Spicer B, Smith DI, Conroy E, Flatau PR, Burns L. Mental illness and housing outcomes among a sample of homeless men in an Australian urban centre. *Australian and New Zealand Journal of Psychiatry*. 2014.
- **9.** Chondraki P, Madianos MG, Dragioti E, Papadimitriou GN. Homeless mentally ill in Athens area: A cross-sectional study on unmet needs and help-seeking. *International Journal of Social Psychiatry.* 2013.
- **10.** Nguyen CM, Liu WM, Hernandez JO, Stinson R. Problem-solving appraisal, gender role conflict, help-seeking behavior, and psychological distress among men who are homeless. *Psychology of Men & Masculinity.* 2012;13:270.
- **11.** Adams-Guppy JR. A systematic review of interventions for homeless alcohol-abusing adults. *Drugs Education, Prevention & Policy.* 2016;23:15-30.
- **12.** Speirs V, Johnson M, Jirojwong S. A systematic review of interventions for homeless women. *Journal of Clinical Nursing*. 2013;22:1080-1093.
- 13. Uebelacker LA, Tremont G, Epstein-Lubow G, et al. Open trial of Vinyasa yoga for persistently depressed individuals: evidence of feasibility and acceptability. *Behavior Modification*. 2010;34:247-264.
- **14.** Pilkington K, Kirkwood G, Rampes H, Richardson J. Yoga for depression: The research evidence. *Journal of Affective Disorders* 2005;89:13 24.
- **15.** Kirkwood G, Rampes H, Tuffrey V, Richardson J, Pilkington K. Yoga for anxiety: a systematic review of the research evidence. *Br J Sports Med.* 2005;39:884-889.

- **16.** Chong CSM, Tsunaka M, Tsang HWH, Chan EP, Wai Ming C. Effects of yoga on stress management in healthy adults: A systematic review. *Alternative Therapies in Health and Medicine*. 2011;17:32-38.
- **17.** Granath J, Ingvarsson S, von Thiele U, Lundberg U. Stress management: A randomized study of cognitive behavioural therapy and yoga. *Cognitive Behaviour Therapy*. 2006;35:3-10.
- **18.** Michalsen A, Grossman P, Acil A, et al. Rapid stress reduction and anxiolysis among distressed women as a consequence of a three-month intensive yoga program. *American Journal of Case Reports*. 2005;11(12):CR555-CR561.
- **19.** Telles S, Singh N, Balkrishna A. Managing mental health disorders resulting from trauma through yoga: a review. *Depression Research and Treatment*. 2012.
- **20.** Taibi DM, Vitiello MV. A pilot study of gentle yoga for sleep disturbance in women with osteoarthritis. *Sleep Medicine*. 2011;12:512-517.
- **21.** Manjunath NK, Telles S. Influence of yoga and Ayurveda on self-rated sleep in a geriatric population. *Indian Journal of Medical Research*. 2005;121:683-690.
- **22.** Pereira H, Joseph RF, Pereira DD, Iyer K. Yoga and Society: Yoga for the People Afflicted with Addiction and Yoga for the Practice of Christian Meditation. *Journal of AYUSH:-Ayurveda, Yoga, Unani, Siddha and Homeopathy.* 2012;1.
- **23.** Shafii M, Lavley R, Richard R. Mediation and prevention of alcohol abuse. *Am J Psychiatry*. 1975;132:942-945.
- **24.** Vedamurthachar A, Janakiramaiah N, Hegde JM. Antidepressant efficacy and hormonal effects of Sudarshana KriyaYoga (SKY) in alcohol dependent individuals. *J Affect Disord*. 2006;94:249-253.
- **25.** Kessler, R. C., Andrews, G., Colpe, L. J., Hiripi, E., Mroczek, D. K., Normand, S. L., ... & Zaslavsky, A. M. (2002). Short screening scales to monitor population prevalences and trends in non-specific psychological distress. *Psychological medicine*, *32*(6), 959-976.
- **26.** Rokach, A. (2005). The causes of loneliness in homeless youth. *The Journal of psychology*, *139*(5), 469-480.
- **27.** Fazel, S., Khosla, V., Doll, H., & Geddes, J. (2008). The prevalence of mental disorders among the homeless in western countries: systematic review and meta-regression analysis. *PLoS medicine*, *5*(12), e225.
- **28.** Folsom, D. P., Hawthorne, W., Lindamer, L., Gilmer, T., Bailey, A., Golshan, S., ... & Jeste, D. V. (2005). Prevalence and risk factors for homelessness and utilization of mental health services among 10,340 patients with serious mental illness in a large public mental health system. *American Journal of Psychiatry*, *162*(2), 370-376.
- **29.** O'Campo, P., Kirst, M., Schaefer-McDaniel, N., Firestone, M., Scott, A., & McShane, K. (2009). Community-based services for homeless adults experiencing concurrent mental health and substance use disorders: a realist approach to synthesizing evidence. *Journal of Urban Health*, 86(6), 965.

Appendix 1: The yoga survey

YOGA COMMUNITY CLASS SURVEY

The following survey is about your yoga and wellbeing. Please contact the primary investigator (Dr Geoffrey Lyons 02 8236 8071; geoff.lyons@acap.edu.au) if you have any questions about the survey or the research being conducted. You can also ask your Yoga Foundation yoga teacher for information.

	following 3 questions will be used to create a unique code for you. This code protects your entiality. It can be used to identify your data if needed without actually using your name.						
a.	Please write the first 2 letters of your first name in this space. For example, if your name was Stephen you would write "st":						
b.	Please write the last 2 letters of your surname in this space. For example, if your surname was Brown you would write "wn":						
C.	Please write the last 2 numbers from your year of birth in this space. For example, if you were born in 1972 you would write "72":						
Section	Section 1: The following questions help us understand why people do yoga						
2. Why	do you attend these free yoga classes (tick as many boxes as you need)						
П	o relax						
ПΤ	o be with other people						
	or fun						
ПΤ	o pass the time						
	helps me manage my mental health problems						
	helps me stay fit and healthy						
□F	or spiritual development						
	Other (please specify):						

____times

3.	Which	one	of the	above is	s your	<u>main</u>	reason	for	attending	these	classes:
----	-------	-----	--------	----------	--------	-------------	--------	-----	-----------	-------	----------

stretches, yoga breathing, relaxation or meditation.

4. How many of these yoga classes have you attended	in the last month?classes
5. How long you have been practising yoga for?	years andweeks
6. Approximately how many times have you practiced	yoga <u>privately</u> in the last month
(i.e. a personal yoga practice outside of class)? This	s might include things like yoga

	Not at all	A little	Moderately	A lot	Extremely
7a. <u>Before</u> class how much do you feel	1	2	3	4	5
Stressed	1	2	3	4	5
Anxious (worried, nervous or fidgety)	1	2	3	4	5
Depressed	1	2	3	4	5

7b. After class how much do you feel	Not at all	A little	Moderately 3	A lot	Extremely 5
Stressed	1	2	3	4	5
Anxious (worried, nervous or fidgety)	1	2	3	4	5
Depressed	1	2	3	4	5

8. Please use the scale below to describe the benefits that yoga has given you in the last 2 weeks. If you don't have the problem on the list then think about whether you think yoga would help if you did.

	1	2	3	4	5
	Strongly Disagree	Disagree	Unsure / Neutral	Agree	Strongly Agree
a. Yoga helps me sleep	1	2	3	4	5
b. Yoga helps me relax	1	2	3	4	5
c. Yoga helps me feel less stressed	1	2	3	4	5
d. Yoga helps me feel less depressed	1	2	3	4	5
e. Yoga helps me feel less anxious	1	2	3	4	5
f. Yoga helps me drink less alcohol	1	2	3	4	5
g. Yoga helps me use less drugs	1	2	3	4	5
h. Yoga helps me connect with nature	1	2	3	4	5
i. Yoga helps me connect with other people	1	2	3	4	5
j. Yoga makes me feel more spiritual	1	2	3	4	5
k. Yoga gives my life meaning	1	2	3	4	5

Section 2: The following questions are about your health and life history

9. Gender: ☐ Male	☐ Female
10. Age in years:	
11. What is the highe	st level of education you have achieved?
☐ Primary School o	r less (Yrs. 1 – 6)

□ Lower Secondary (Yrs. 7 – 9)		
□ Upper Secondary (Yrs. 10 – 12)		
☐ Vocational Qualification (e.g. TAFE certificate/diploma)		
☐ Undergraduate University Degree		
☐ Postgraduate University Degree		
12. What is your relationship status?		
☐ Single		
☐ Married or defacto relationship		
☐ Divorced or separated		
☐ Widowed		
☐ Other:		
13. What is your ethnicity		
☐ Indigenous or Torres Strait Islander		
☐ Anglo-Saxon Australian (white Australian)		
□ Other:		
14. Which of the following best describes you at the moment (select mul	tiple response	s if needed)?
☐ Unemployed		
☐ Casually employment		
☐ Part-time employment		
☐ Full-time employment		
☐ Other:		
15. Do you currently receive a pension or unemployment benefits?	☐ Yes	□No
16. Where do you currently live?		
☐ An apartment / townhouse		
☐ In a house		

∐ In a	a shelter			
□ No	fixed address (e.g. on	the street)		
□ Oth	ner:			
17. Whic	ch of the following be	st describes you a	at the present time (select or	ne)
□ Re	ligious (I believe in Go	d or gods and pra	actice religion)	
☐ Sp	iritual (I believe in God	d, gods or someth	ing divine but am not religiou	ıs)
□ Atl	heist (I do not believe	in God, gods or a	nything divine or transcender	ntal)
□ Un	nsure (I don't know wh	at to believe abo	ut God, gods or the divine)	
□ Ot	her (please specify): _			
Section	3: The following q	uestions are al	bout your mental health	
18. How	many days in the last	: 14 days have you	u drunk alcohol?	days drinking
19. Pleas	se tick any other subs	tances you have ı	used in the last 14 days	
	☐ Cannabis	☐ Heroin	□ Ice	
	☐ Amphetamines	☐ Cocaine	□ Other	
20a. Hav	re you <u>ever</u> been diag	nosed with a mer	ntal health disorder?	
□N	0			
□ Ye	es. Please tell us whicl	n ones		
20b. Do	you currently have a	diagnosed menta	l health disorder?	
□N	0			
□ Ye	es. Please tell us whicl	n ones		
21. Whic	ch of the following pro	oblems do you thi	ink you suffer from (tick as n	nany as you like)
□ D	epression			

I	□ Anxiety			
Ī	☐ Drugs or alcohol problems			
I	☐ Other. Please specify			
22. Are you currently taking medication for a mental health problem				
I	□ No			
I	□ Yes			

23. During the past 2 weeks (14 days), how much of the time did you feel					
	All the time	Most of the time	Some of the time	A little of the time	None of the time
aso sad nothing could cheer you up?	0	0	0	0	0
bnervous?	0	0	0	0	0
crestless or fidgety?	0	0	0	0	0
dhopeless?	0	0	0	0	0
ethat everything was an effort?	0	0	0	0	0
fworthless?	0	0	0	0	0
gangry?	0	0	0	0	0
hlonely?	0	0	0	0	0
i. unsupported?	0	0	0	0	0