JOURNEY TO SOCIAL INCLUSION

Chronic Homelessness in Melbourne: Third-Year Outcomes of Journey to Social Inclusion Phase 2 Study Participants

Findings from the Journey To Social Inclusion research study

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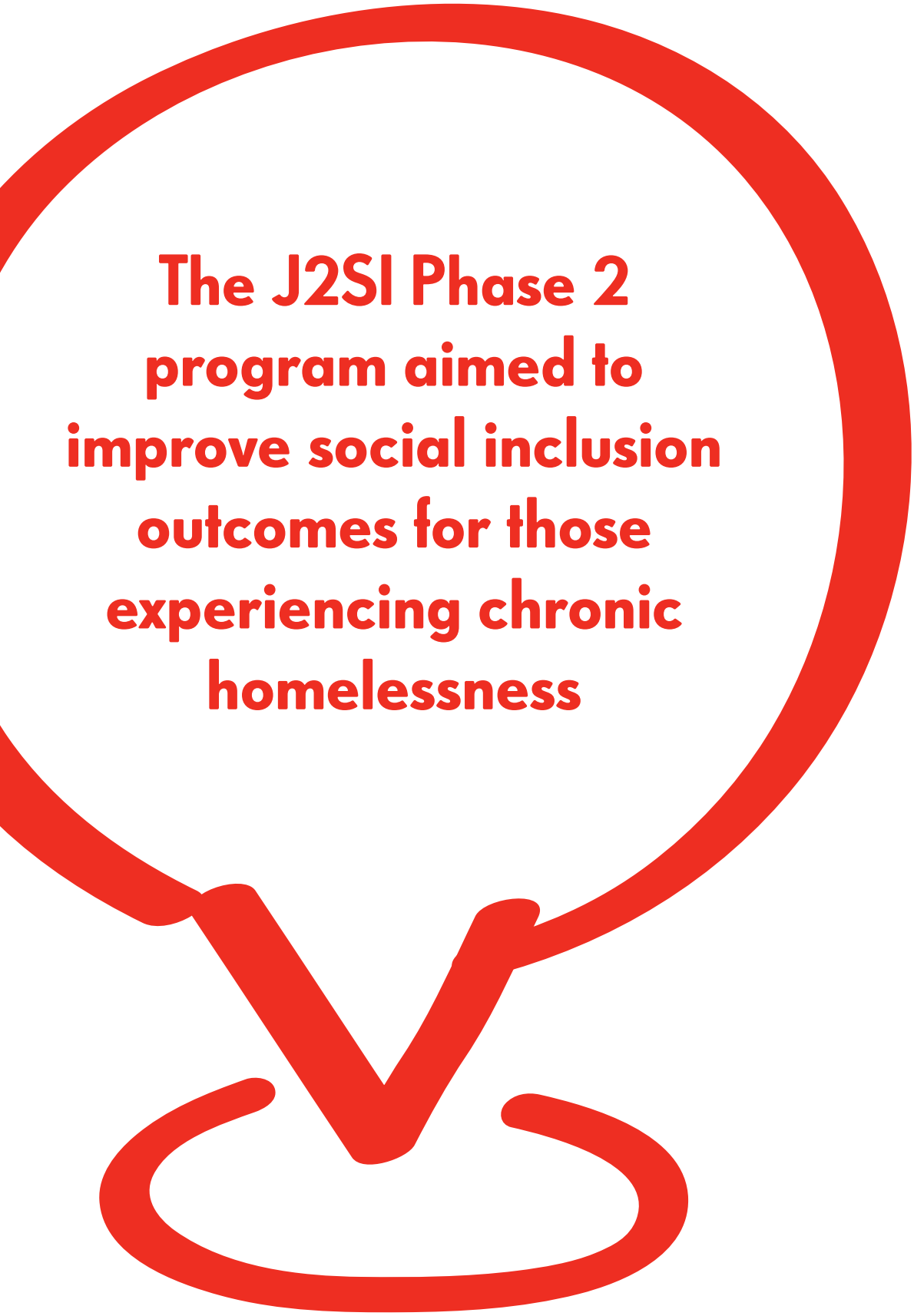

The J2SI Phase 2 program aimed to improve social inclusion outcomes for those experiencing chronic homelessness

Chronic homelessness in Melbourne:

The final outcomes of Journey to Social Inclusion Phase 2

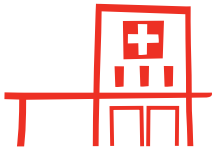
This report presents outcomes for J2SI participants against a comparison group using existing services.

A VULNERABLE CLIENT GROUP

- **179 people** experiencing chronic homelessness participated in the study.
- **12%** identified as Aboriginal or Torres Strait Islander.
- **68%** were male with an average age of 40 at baseline.
- **32%** were female with an average age of 41 at baseline.
- **13 people** died during the study.
- **101 people** completed the final survey, three years after baseline.

HOUSING

- At the end of the program, SHM reported that **82.5% of J2SI participants were housed**.
- The final survey found that **more J2SI participants were housed** (62.2%) than the control group (28.3%).
- **40.5% of J2SI participants felt safe** in their housing "all of the time". Three times the number at the beginning of the study.



HEALTH AND WELLBEING

- Self-reported depression, anxiety and stress **reduced for J2SI participants**.
- J2SI participants reported a **reduction in illicit substance use** from 86.5% at the start of the program, compared to 64.9% at the end of the program.
- **Nights spent in drug and alcohol rehabilitation decreased** from an average of 10.73 nights (in the 12 months prior to the baseline) to 3.62 nights (in the 12 months prior to the final survey).

SOCIAL AND ECONOMIC PARTICIPATION

- **More J2SI participants reported participating in the labour force** (employed or looking for work) than the control group.
- J2SI participants reported that they were **stopped by police an average of 2.38 times** (in the 12 months prior to the final survey) compared to 5.75 times for the control group.

J2SI PROGRAM YEAR 3 OUTCOMES

For every $1 invested in the J2SI program, $1.84 is returned in **health and justice cost savings** compared to the control group.

Mean **health services costs** (in the 12 months prior to the final survey) **were lower** for J2SI participants ($20,656) than the control group ($26,738).

Mean **justice service costs** (in the 12 months prior to the final survey) **were lower** for J2SI participants ($5,515) than the control group ($7,386).

ACKNOWLEDGEMENTS

The authors would like to thank research study participants for their participation in the Journey to Social Inclusion (J2SI) Phase 2 research study and for giving so generously of their time to complete the J2SI Phase 2 surveys.

We would also like to thank our three partner agencies in this study (i.e., Sacred Heart Mission (SHM), VincentCare and St Mary's House of Welcome) and their staff for their assistance in implementing the study. In particular, we wish to thank the J2SI Phase 2 Steering Committee and the J2SI Phase 2 Evaluation Committee; SHM CEO, Cathy Humphrey; SHM General Manager, Leanne Lewis; SHM Operations Manager Anna Paris and SHM Manager for J2SI Phase 2, Karen Lococo.

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We would like to thank the Victorian Department of Health and Human Services, Centre for Evaluation and Research Evidence, for their support of the research undertaken in this study and in particular the Centre for Victorian Data Linkage for undertaking data linkage for the project.

The opinions in this report reflect the views of the authors and do not necessarily reflect those of SHM and partner organisations.

About Sacred Heart Mission

Sacred Heart Mission (SHM) was founded in 1982 as a small volunteer service providing food, clothing, emergency relief, accommodation and companionship to people experiencing homelessness. It has grown to become a major provider of homelessness services in Melbourne. Further information about SHM is available at www.sacredheartmission.org.

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Disclosure

This report is presented by an independent research team based at the University of Western Australia and Swinburne University of Technology. It provides findings from the three years of the J2SI Phase 2 randomised control trial study. The J2SI Phase 2 program is not a double-blind RCT. As such, the J2SI Phase 2 program managers and case workers have been aware from the start of the study that they were working with J2SI Phase 2 program participants and all participants knew that they whether they were part of the program.

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ABBREVIATIONS

3-ILS	Three-Item Loneliness Scale
ABS	Australian Bureau of Statistics
AHURI	Australian Housing and Urban Research Institute
ASSIST	Alcohol, Smoking and Substance Involvement Screening Test
CEO	Chief Executive Officer
CVDL	Centre for Victorian Data Linkage
CSI	Centre for Social Impact
DASS	Depression Anxiety Stress Scale
E group	Control group
GP	General Practitioner
HBD	Hospital Bed Days
ICM	Intensive Case Manager
J group	Intervention group
J2SI	Journey to Social Inclusion
J2SI Phase 2	Journey to Social Inclusion Phase 2
K10	Kessler Psychological Distress Scale
PTSD	Post Traumatic Stress Disorder
RCT	Randomised controlled trial
SD	Standard deviation
SHM	Sacred Heart Mission
UWA	University of Western Australia
VAED	Victorian Admitted Episodes Database
WHO	World Health Organisation
WHOQOL	World Health Organization Quality of Life
WHOQOL-BREF	World Health Organization Quality of Life Brief Version

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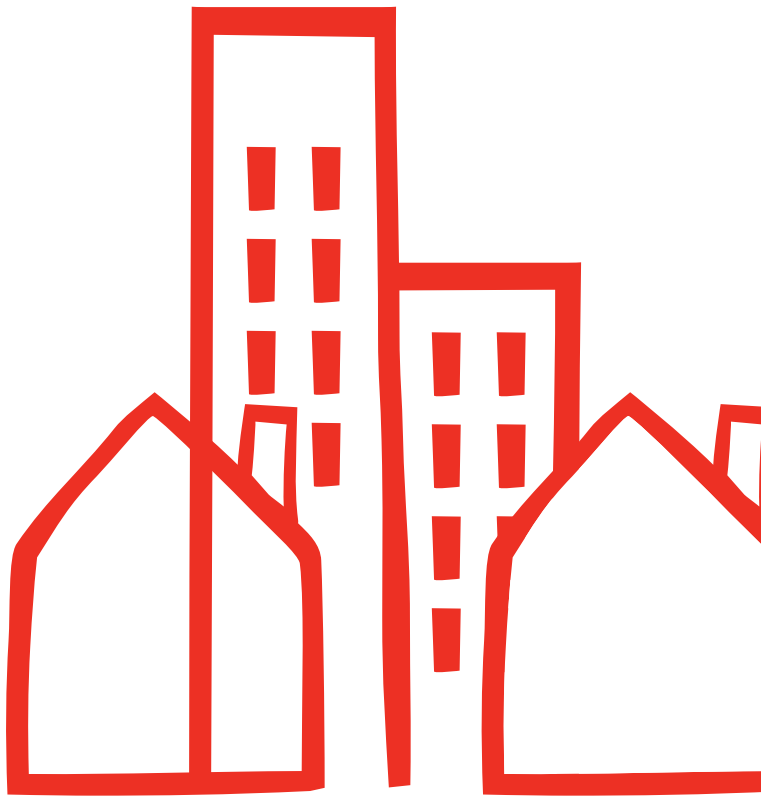


EXECUTIVE SUMMARY

Sacred Heart Mission (SHM)'s Journey to Social Inclusion (J2SI) Phase 2 program began in January 2016 and ended in September 2019. Building on the strong housing outcomes of the J2SI pilot program, the J2SI Phase 2 program aimed to address chronic homelessness in Melbourne by facilitating rapid access to housing and sustaining that housing over time. In addition, the J2SI program sought improved health and wellbeing outcomes, increased social and economic participation, and increased capacity for independence. In short, the J2SI Phase 2 program aimed to improve social inclusion outcomes for those experiencing chronic homelessness.

This report presents the outcomes achieved by participants in the J2SI Phase 2 research study over the 2016-2019 time period. The report also presents an economic analysis of the J2SI Phase 2 program, comparing the cost of delivering the program against the impact of the program on government costs arising from participant interaction with the health and justice systems.

The J2SI program's key objective was to house those experiencing chronic homelessness. This objective was achieved. Participants in the J2SI Phase 2 program achieved rapid transition into permanent housing (public and community rental housing and private rental housing). They also maintained that housing in the vast majority of cases for the duration of the program. J2SI program participants also achieved positive outcomes in a number of other outcome domains to varying degrees such as mental health and wellbeing, social connectedness, and economic participation.

Under the J2SI Phase 2 program, participants were provided with three years of support across five service delivery elements: intensive case management and service coordination, tenancy support and capacity building to maintain housing, trauma-informed practice, building skills for inclusion, and fostering independence. Section 2 of the report provides further details of the J2SI Phase 2 program and sets out the changes to the J2SI model design that were implemented on the basis of the findings and recommendations from the pilot. These changes in the J2SI program acted positively on outcomes achieved in Phase 2.

To evaluate the longitudinal outcomes of the J2SI Phase 2 program across a range of domains of wellbeing, Sacred Heart Mission (SHM) enlisted the Centre for Social Impact (CSI) at The University of Western Australia (UWA), in collaboration with Swinburne University of Technology, to lead a randomised control trial (RCT) research study utilising longitudinal survey data, longitudinal qualitative data and linked administrative data. The J2SI Phase 2 study was unblinded, as participants in the program knew whether or not they were receiving support under the J2SI Phase 2 program and the providers of the program knew they were delivering support under the program.

The J2SI research study had three key objectives:

1. To describe histories, needs, circumstances and pathways of those experiencing chronic homelessness in Melbourne;
2. To assess the impact of the J2SI Phase 2 program implemented by SHM compared to that derived from existing service provision in the following domains: education, employment and income; social inclusion; mental health; physical health; housing; and, service usage; and
3. To examine the cost of the J2SI Phase 2 program compared with existing service provision and assess the overall cost-effectiveness of the J2SI Phase 2 program accounting for differential program costs and differential cost offsets.

In brief, the RCT involved study participants, with their full consent, being randomised after recruitment and following the Baseline survey into either the J2SI Phase 2 program, termed the J group, or into the control group termed the E group. The latter continued to receive services 'as usual'.

All participants in the study were receiving some level of support from homelessness services at the time they entered the program. Those randomised to the E group were free to access any support or housing programs they wished to or that became available during the course of the study. It is important to note that, new support and housing programs for those experiencing homelessness, particularly for rough sleepers, were rapidly expanded and implemented in Melbourne during the J2SI Phase 2 study period. This has provided greater opportunities for those in the control group. In other words, the RCT was an effectiveness trial, whereby the counterfactual to the J2SI Phase 2 program did not remain static. Indeed, it is possible that the gap in the level and type of support between the J group and the E group narrowed over the period of the J2SI Phase 2 program. We hypothesise that the significant increase in government funded housing and mental health and alcohol and drug support programs for the chronically homeless in Victoria may have positively influenced the outcomes for the E group over and above what would have otherwise occurred had 'service as usual' remained at the level that was available in 2016. Section 2 provides details of the significant expansion in funding undertaken by the Victorian Government for homelessness support and related programs during the period of the J2SI Phase 2 program.

The initial target sample size was 60 J group participants and 70 E group participants, with the latter group slightly larger in anticipation of a higher attrition rate. SHM found that some J group participants did not engage

with the program or moved outside the zone in which they could provide support, so the study continued to recruit participants to reach the original target of engagement. At the conclusion of the recruitment round, 90 participants had been randomised to the J group and 94 were randomised to the E group. After recruitment, eight J group participants moved outside of the geographic scope of the program and 13 could not be contacted in the three months after their Baseline interview. These participants were categorised as 'inactive' (I group) and are not included in any results relating to the J2SI Phase 2 program participant group (the J group) in the present study. It should be noted that not all those in the J group in the study remained engaged in the program; five participants disengaged from or had no further contact with the J2SI Phase 2 program from end 2017 onwards and a further four participants partially engaged with the program (three of whom died during the study). None of this group were permanently housed by SHM during the course of the study.

Following the Baseline survey and subsequent randomisation, participants were interviewed in an ongoing six-monthly survey for three years (2016-2019). Where consent was granted from participants, we applied through the Centre for Victorian Data Linkage (CVDL) (following an approved ethics process that applies to data linkage in Victoria beyond the university-based ethics approval) to gather linked public hospital use, public housing tenancy data and other Victorian government administrative data. This report provides preliminary analyses of the public hospital use and public housing tenancy data. Further analysis of the linked administrative data will occur as more administrative data is made available to the research team.

Findings from seven waves of six-monthly data collection, from Baseline (Wave 1) to 36 months (Wave 7), are presented in the report, along with some preliminary analysis of linked administrative data relating to health service use in public hospitals and public housing. The first wave of data collection began in January 2016 and continued through to the end of September 2016. Wave 7 began in January 2019 and continued until the end of 2019.

In addition to the longitudinal survey data and linked administrative data, three rounds of qualitative interviews with a sub-set of participants (randomly drawn from the full sample) were also undertaken. An analysis of qualitative interview data relating to the J2SI Phase 2 research study is provided in the companion report by the research team published concurrently: A Qualitative Study of Sacred Heart Mission's Journey to Social Inclusion (J2SI) Phase 2 Program: Experiences and Perspectives of J2SI Study Participants (Thielking et al. 2020). Section 3 of the report provides further details of the research design followed in the study.

This report is the second and final report in the J2SI Phase 2 research study series and follows the publication of the Year 1 report (Flatau et al. 2018) and the Baseline report (Miscenko et al. 2017). As the study was unblinded, the Year 1 report did not compare outcomes between the J group and E group, to ensure that interim results did not impact the study participants' or case workers' behaviour. This final report presents and discusses results for both groups, and elaborates on the potential factors affecting the results.

The J2SI Phase 2 Research Study Participants

The J2SI Phase 2 research study design is presented in full in section 3 below and in Vallesi et al. (2019). The research study recruited 243 participants receiving support from homelessness services in inner city Melbourne; principally from the three services that partnered in the study, namely, SHM, VincentCare and St Mary's House of Welcome. A total of 186 people were interviewed in the baseline survey (57 people were deemed ineligible or did not show up for the baseline survey).

Following the baseline survey, the number of survey responses collected fell from its initial level and varied between waves. There were a number of factors contributing to this, including participant death, request to discontinue participation in the survey, and loss to follow-up through loss of contact details.

As our goal is to present change in outcomes over time, it is important to ensure that we are considering 'like with like'; that is, that we are looking at the same groups of people at the different time points of the study. For this reason, we have focused on results for what is termed 'a matched sample of participants', that is, for those who complete all waves of the survey.

In principle, matched survey data provides a more precise picture of outcomes for study participants than the complete survey data. However, the constraint of the matched sample approach (the participant needs to have completed two or more surveys) is that it results in smaller samples in an environment where not all participants could be found at each survey point or may have not wished to complete a survey. In addition to the smaller sample issue, matched sample analysis may introduce biases into the analysis. For example, it may be the case that participants that complete more surveys are (in a relative sense) more engaged with services, more easily contactable, and more stable in their lives. It is also the case that some participants who have moved on in their lives and transitioned into housing and perhaps employment, prefer to not continue their engagement in the study. The benefit of administrative data in this context is that it overcomes these issues but for a much more restricted set of outcomes.

Three matched sample groups of the survey data are referred to in our analysis.

The Fully Matched Sample: Comprised of those who completed a survey at each and every one of the seven time points in the study. The fully matched sample is the ideal matched sample to use to analyse trends in outcomes over the whole period of the study and is particularly useful for those topic areas in which a question is asked in each survey round and where a question pertains to the six month period prior to a survey being administered. The limiting factor is a small sample size (n= 51).

The Annual Matched Sample: Comprised of those who completed the Baseline, Wave 3, Wave 5 and Wave 7 which represent the 12-month time points of data collection. The annual matched sample is useful in analysing yearly trends in outcomes over the whole period and where a question pertains to the 12 months prior to a survey being administered. The sample size expands to 72 as compared with the fully matched sample.

The Matched Sample: In order to balance the desire to maximise the use of all of the responses to the survey with the need to ensure we are making fair comparisons over time, outcomes at Baseline and Wave 7 are presented for what we term the matched sample, comprised of those that completed both the Baseline and the Wave 7 surveys. This is particularly useful for comparing differences in outcomes from beginning to end, that is between Baseline and Wave 7 (36 months) but not useful for examining trends over time. The matched sample has the largest sample size (n = 101).

The definitions and number of respondents within each sample category are presented in Table 3 in the research methodology section (Section 3). It should be noted that none of the nine J participants referred to earlier who either disengaged from the J2SI Phase 2 program or partially engaged in the program are in the fully matched or annual matched samples while only one is in the matched sample.

Housing

Housing is the priority outcome of the J2SI Phase 2 program. At the point of the Baseline in 2016, all participants in the research study were homeless or, in a small number of cases, at direct risk of losing their housing after experiencing prior periods of homelessness in the immediate past. However, at the year three point in 2019, 62.2% of J2SI Phase 2 program participants (the J group) who completed the Wave 7 survey reported that they were permanently housed i.e., were in public housing, community housing, private rental housing or in owner occupied housing.

In addition to using our own survey evidence, we also, through a data linkage process with CVDL, examined linked public housing records for J2SI Phase 2 research study participants. We found that 35.6% of J2SI Phase 2 clients (the Js) were in public housing using linked administrative data two years into the study (the final point at which linked administrative data were provided for the present report).

The housing records of Sacred Heart Mission itself for the J2SI Phase 2 program participants revealed that 87.5% of participants in the program were supported by SHM to move into permanent housing of one kind or another (public housing, community housing, private rental housing) during the course of the study. At the end of the program, 82.5% of those J participants who had not died during the course of the study, were in permanent housing. If we exclude those who disengaged from the program earlier in its term then 90.4% of this smaller J group were assessed as being permanently housed by the SHM team at the end of the program.

When comparing program participants with those not in the program we found lower levels of permanent housing among those not randomised to the J2SI Phase 2 program following the Baseline survey. As compared with a permanent housing rate of 62.2% for Js at Wave 7, 28.3% of Es in the matched sample (those who completed the Baseline and Wave 7) were housed at Wave 7. In the linked public housing administrative data, a lower rate of public housing at the two-year point was evident for the Es: 14.8% as compared with 35.6% for the Js.

Rapid entry into housing and stability of tenure was present for many, with 48.4% of Js in the annual matched sample (those who completed all annual waves of the longitudinal survey) reporting that they resided in permanent housing from Wave 3 through to Wave 7 (i.e., for two years), and an additional 16.1% were housed from Wave 5 to Wave 7 (one year). Just over 16% (16.2%) of Es were in permanent housing from Wave 3 to Wave 7 in the annual matched sample, with an additional 10.8% housed from Wave 5 to Wave 7. The strong outcomes for Js in terms of housing reflect the high emphasis on rapid, but also sustained housing in the J2SI Phase 2 program.

Satisfaction with housing increased for both Js and Es over time between Baseline and Wave 7. At Baseline, Js in the fully matched sample (those who completed every single wave of the longitudinal survey), on average, rated their satisfaction with housing as 2.4 out of 5, increasing to 3.9 at Wave 7. Mean satisfaction with housing for Es in the fully matched sample was 2.5 out of 5 at Baseline, increasing to 3.6 out of 5 at Wave 7.

J2SI Phase 2 program clients expressed very strong support for how the J2SI Phase 2 program had assisted them in terms of housing. On average, Js in the fully matched sample were very satisfied with the support they received from the J2SI Phase 2 program with regard to housing (mean rating: 4.4/5, min: 4.0, max: 4.5).

In terms of feeling safe, 13.5% of Js in the matched sample

said they felt safe 'all of the time' at Baseline, increasing to 40.5% at Wave 7. Roughly one quarter (24.5%) of Es felt safe 'all of the time' at Baseline, increasing to 43.4% at Wave 7.

J2SI Phase 2 Program – Housing

J2SI successfully exited individuals out of chronic homelessness and into permanent housing and those that attained housing, sustained it.

By Year 3, 62.2% of J2SI Phase 2 clients that completed the final survey were in permanent housing (social housing or private rental housing), and nearly half had been stably housed for two years. By comparison, 28.3% of Es were in permanent housing at Year 3, and 16.2% had been stably housed for two years.

The housing records of Sacred Heart Mission itself for the J2SI Phase 2 program participants revealed that 87.5% of participants in the program were supported by SHM to move into permanent housing of one kind or another (public housing, community housing, private rental housing) during the course of the study. At the end of the program, 82.5% of those J participants who had not died during the course of the study, were assessed by SHM as being in permanent housing.

While only 13.5% of J2SI clients felt safe in their current housing circumstance at Baseline, by Year 3, 40.5% reported feeling safe in their housing all of the time.

J2SI clients reported very high levels of satisfaction with the housing services provided by Sacred Heart Mission to J2SI clients.

Physical Health

Those experiencing chronic homelessness also exhibit elevated rates of serious long-term health conditions. This general finding was also evident among participants in the J2SI Phase 2 research study reported in our baseline study report (Miscenko et al. 2017). Changes in physical health outcomes are clearly difficult to achieve for those experiencing long-term chronic illnesses.

Mortality among participants in the study was particularly high with 13 of the original 179 participants known to have died (equally across both the J group and E and I groups) by the end of Wave 7. We do not yet have detailed cause of death data but the prevalence of both long-term health conditions, diagnosed mental health conditions and substance use issues may have contributed to this very high death rate.

We examined changes in health over the course of the study using a measure of self-assessed health status which is a commonly used summary measure of physical health around the world. In the J2SI Phase 2 research study, we asked a standard question used in health studies, namely, "In general, would you say your health is…" to which the participant selects from 'excellent', 'very good', 'good', 'fair', and 'poor' (AIHW, 2016).

At Baseline, 5.4% of Js in the matched sample rated their health as poor. At Wave 7, the proportion of Js rating their health as 'poor' increased to 13.5%. The proportion of Es in the matched sample rating their health as 'poor' remained stable between Baseline (20.8%) and Wave 7 (18.9%). Fewer Js and more Es rated their health as 'very good' at Wave 7 relative to Baseline, and more Js and Es rated their health as 'good' at Wave 7 compared with Baseline.

Among those in the annual matched sample, 38.7% of Js and 27.0% of Es felt that their health was 'worse' or 'much worse' than a year ago, while 29.0% of Js and 24.3% of Es felt that their health was 'better' or 'much better' than the year prior to survey.

Satisfaction with health fluctuated slightly over the course of the research study for both Js and Es, but remained generally low (3.1 out of 5 at Baseline and 3.2 at Wave 7 for Js; 3.0 at Baseline and 3.1 at Wave 7 for Es). J Group participants in the fully matched sample were generally satisfied with the support they received from the J2SI Phase 2 program with regard to physical health (mean: 3.9/5, min: 3.8, max: 4.1).

J2SI Phase 2 Program – Physical Health

At Baseline, participants in the J2SI Phase 2 study exhibited elevated rates of serious long-term health conditions. Mortality among participants in the study was particularly high with 13 of the original 179 participants known to have died (equally across both the J group and E and I groups) by the end of wave 7.

Despite J2SI Phase 2 clients being, on average, satisfied with the support they received from the program in relation to making efforts to improve their physical health, by Wave 7, there was little change in J2SI client's self-assessed physical health outcomes.

The mixed outcomes with respect to physical health for J2SI Phase 2 clients at 36 months may reflect the high prevalence of chronic illness in the group that was evident in the Baseline survey and the worsening in those health conditions over time.

Mental Health

Mental health is assessed in the J2SI Phase 2 research study with respect to both a measure of psychological distress and measures relating to depression, anxiety,

and stress. The J2SI Phase 2 research study also includes estimates of self-reported diagnosed mental health illnesses which reveal high rates of diagnosed mental health disorders on entry to the study. The most prevalent conditions at Baseline were depressive disorders (60.3%), substance-related abuse (56.4%), anxiety disorders (43.6%), and post-traumatic stress (35.2%). More than three-quarters (74.3%) of respondents reported three or more chronic physical or mental health conditions at baseline (Miscenko et al. 2017).

In terms of psychological distress, mean scores on the Kessler Psychological Distress Scale (K10) for the J2SI client group decreased between Baseline and Wave 7 in the matched sample from 28.2 at Baseline to 24.9 at Wave 7. A similar reduction was evident for Es in the study. In terms of categories of psychological distress, fewer Js in the matched sample were experiencing 'very high' levels of distress at Wave 7 relative to Baseline, and more Js were experiencing 'low' levels of distress at Wave 7 relative to Baseline.

Mean scores on the depression subscale of the Depression, Anxiety, and Stress Scale (DASS21) decreased between Baseline and Wave 7 for both Js and Es in the fully matched sample, with Js recording higher scores than Es at Baseline (8.3 versus 7.5) and lower scores than Es at Wave 7 (5.7 versus 6.3). More Js in the fully matched sample were experiencing 'normal' levels of depression at Wave 7, while the proportion of Es in the 'normal' category remained the same at Wave 7 and Baseline. In terms of anxiety, Js in the fully matched sample recorded higher mean scores than Es at both Baseline and Wave 7 (6.2 for Js and 5.6 for Es at Baseline, 4.6 for Js and 4.0 for Es at Wave 7), though mean scores for both groups decreased between Baseline and Wave 7.

For both groups, but more so for Es, the proportion of participants in the fully matched sample in the 'normal' category of anxiety increased between Baseline and Wave 7, while the proportion experiencing 'extremely severe' anxiety decreased. With respect to stress, Js in the fully matched sample recorded higher mean scores than Es at Baseline (8.8 versus 7.9), but marginally lower scores at Wave 7 (5.9 versus 6.1). The proportion of both Js and Es in the fully matched sample with stress scores in the 'normal' category increased, while, notably, no participants in either group in the fully matched sample were experiencing 'extremely severe' levels of stress at Wave 7.

In terms of satisfaction with their mental health outcomes, both Js and Es in the fully matched sample increased between Baseline and Wave 7. Fully matched Js reported mean satisfaction with mental health outcomes of 3.0/5 at Baseline, increasing to 3.7 at Wave 7; fully matched Es reported mean satisfaction with mental health outcomes of 3.0/5 at Baseline, increasing slightly to 3.4/5 at Wave 7. The fully matched J group was generally satisfied with the support received from the J2SI Phase 2 program for mental health support (mean: 4.1/5, min: 3.8, max: 4.3).

J2SI Phase 2 Program – Mental Health

Very high rates of diagnosed mental health disorders were evident among J2SI Phase 2 study participants on entry to the study.

From Baseline to Wave 3, J2SI Phase 2 clients scored lower on psychological distress and indicators of depression, anxiety and stress. In other words, their mental health improved across a broad range of domains during the course of the study. The improvement in mental health outcomes was sustained through the course of the study.

J2SI Phase 2 clients were also more satisfied with their mental health outcomes at the Wave 7 or 36-month time point than at Baseline and were generally satisfied with the mental health support they received from the J2SI Phase 2 program.

Substance Use

The relationship between homelessness and substance use is complex; substance use can be both an antecedent, exacerbating factor, and a consequence of homelessness (Johnson & Chamberlain, 2008). General and high risk use of substances decreased among both Js and Es, but particularly Js, between Baseline and Wave 7. Excluding alcohol and tobacco, 13.5% of Js in the matched sample reported that they had used no illicit substances in the three months prior to the Baseline survey. At Wave 7, the proportion of Js in the fully matched sample that had not used any illicit substances in the three months prior to survey had increased to 35.1%. Only 16.2% of Js in the matched sample, compared with 36.5% of Es, had used more than two illicit substances in the three months prior to survey at wave 7.

With respect to high risk use of substances, no participants in either group (J or E) of the matched sample were in the high risk use category for tobacco products, cocaine, inhalants, or hallucinogens at Wave 7. Small numbers (<6%) of each group were in the high risk category for cannabis, amphetamines, sedative or sleeping pills, and opioids at Wave 7; 7.7% of Es, compared with 2.7% of Js in the matched sample, were in the high risk category of alcohol use.

Both Js and Es in the fully matched sample were generally satisfied with the outcomes achieved with respect to their safe use of drugs and alcohol (Js: mean: 3.9/5, min: 3.7, max: 4.0; Es: mean: 3.6/5, min: 3.5, max: 4.0). The satisfaction of the Js in the fully matched sample with the support they received from the J2SI program for safe use of drugs and alcohol fluctuated slightly between a minimum of 3.6 (Wave 5) and a maximum of 4.0 (Wave 6) (mean: 3.8).

J2SI Phase 2 Program – Substance Use

General and high risk use of substances decreased among J2SI Phase 2 clients between Baseline and Wave 7 and clients were satisfied with the support they received to address their substance use issues from the J2SI Phase 2 program.

Health service utilisation and costs

One of the potential benefits of the provision of permanent housing under the J2SI Phase 2 program is that utilisation of healthcare services may fall, particularly in terms of the use of emergency facilities. However, the analysis of trends in healthcare utilisation and costs over time for those experiencing homelessness is very difficult for a number of reasons.

First, while mean healthcare costs of those experiencing homelessness are considerably higher than for the general population, high health costs are concentrated in a relatively small group (see, for example, Zaretzky et al. 2017). When this is combined with a relatively small sample as is the case in the current study, the healthcare use trajectories of a very small number of people can affect mean healthcare costs in a very significant way. Second, the provision of structured support, particularly with permanent, stable housing may allow long-term chronic illnesses to be treated better leading to higher than normal health care utilisation and costs.

On the basis of our longitudinal survey data, at Baseline, among the matched sample, the J group reported higher average health service utilisation than the E group across all types of services, except specialist doctor visits. The differences between the mean health service utilisation of Js and Es in the matched sample in the twelve months prior to Baseline were particularly pronounced for nights spent in hospital (11.32 versus 4.28), nights in drug and alcohol rehabilitation facilities (10.73 versus 2.25), visits to mental health professionals (11.43 versus 5.28), and nights spent in mental health facilities (4.24 versus 1.85). The analysis of the data indicates that these mean health costs were driven by a very small number of participants. At Wave 7, among the matched sample, the average number of nights Js spent in hospital halved, while Es doubled, nights in drug and alcohol rehabilitation reduced by two-thirds for Js and reduced to 0.0 for Es, visits to mental health professionals reduced by a third for Js and increased about 20% for Es, and nights in mental health facilities reduced slightly for Js and increased slightly for Es.

Examining trends in health service utilisation using the annual matched sample, the number of nights spent in hospital among Es is in a general upward trend, with spikes at Wave 3 and Wave 7, while Js have a steady downward trend in nights spent in hospital between Baseline and Wave 7. Nights in a mental health facility for both Js and Es increase during the program (spiking at Wave 5 for Js and increasing slightly at both Wave 3 and Wave 5 for Es), before returning to roughly Baseline levels.

Emergency department (ED) visits remain stable for Js at around 1.5 visits in the 12 months prior to each survey wave, while Es' ED visits spike at Wave 3 and decline in Wave 5 and Wave 7, though they remain higher than Baseline. The trends of Js and Es in the annual matched sample with respect to nights spent in drug and alcohol rehabilitation facilities diverge, such that Es' spike at Wave 3 and decline steadily to 0.0 at Wave 7, while Js' decline to 0.0 at Wave 3 and increase at Wave 5 and Wave 7 (though remaining lower than at Baseline).

At Baseline, the total estimated annual cost per J in the matched sample across all health services was $36,552. In line with unit costs, nights in hospitals ($21,290), mental health facilities ($4,604), and drug and alcohol rehabilitation facilities ($5,472) accounted for the majority of Js' Baseline health costs. At Wave 7, the total cost of self-reported health service usage among Js reduced to $20,656, accounted for mostly by a halving of hospital admission costs (to $10,264) and a two-thirds drop in drug and alcohol rehabilitation costs (to $1,847). The total cost of self-reported health service utilisation among Es at Baseline was $14,865. As with Js, the majority of Es health service utilisation costs were accounted for by nights in hospitals ($8,052), mental health facilities ($2,006), and drug and alcohol rehabilitation facilities ($1,145). At Wave 7, Es total costs of self-reported health service utilisation increased to $26,738, accounted for by a 2.5x increase in self-reported hospital admissions (to $19,415).

According to the public hospital administrative data, Js spent an average of 8.72 nights in hospital the year prior to Baseline, 10.42 in the year prior to their Wave 3 due date, 10.32 in the year prior to their Wave 5 surveys, and 7.32 in the year prior to their Wave 7 surveys. Es, on the other hand, spent an average of 2.38 nights in hospital in the year prior to their Baseline survey, 6.00 in the year prior to their Wave 3 due date, 5.92 in the year prior to their Wave 5, and 5.91 in the year prior to their Wave 7 survey. The administrative data also reveal that for both groups, median values for nights in hospital are 0.0 at each point underlining the point that it is a relatively small proportion of participants in both the J and E groups that account for the majority of nights in hospital. This is particularly true for the J group where a very small number impact heavily on overall mean estimates.

J2SI Phase 2 Program – Healthcare Utilisation and Costs

Utilisation of healthcare services and costs is concentrated on a relatively small group of those experiencing homelessness and among this group an even smaller number have significant effects on overall costs.

Among J2SI Phase 2 clients, the average number of nights spent in hospital fell over the course of the study, as did nights in drug and alcohol rehabilitation.

At Baseline, the total estimated annual cost per J client in the matched sample across all health services was $36,552. At Wave 7, the total cost of self-reported health service usage among Js reduced to $20,656, accounted for mostly by a halving of hospital admission costs (to $10,264) and a two-thirds drop in drug and alcohol rehabilitation costs (to $1,847).

Justice System Interaction and Costs

Justice system interaction among both Js and Es in the matched sample was relatively low at Baseline. In terms of nights in adult prison, Js reported an average of 0.05 nights in the year prior to the survey, while Es reported an average of 1.36 nights. On average, being held overnight occurred less than once in the year prior for both Js and Es (0.78 and 0.68 times in the previous 12 months, respectively). Js attended court for criminal matters an average of 0.78 times in the 12 months prior to Baseline (Es: 1.40 times), visited a parole officer 0.11 times (Es: 0.55 times), were stopped in the street by police 2.19 times (Es: 4.53 times), and were stopped in a vehicle by police 0.95 times (Es: 1.55 times). Justice system interaction at Wave 7 was comparable to Baseline for both Js and Es, with the exception of nights in prison where both groups experienced a substantial increase, to an average of 10.89 nights for Js and 12.00 for Es in the 12 months prior to Wave 7.

As with healthcare utilisation, justice system interaction is concentrated among a relatively small group of participants, and the large increase in the number of nights spent in prison means that both Js and Es in the matched sample reported an increase in overall justice costs between Baseline and Wave 7. Justice costs (in 2015-16 dollars) for Js were $1,776 per person at Baseline, and $5,515 at Wave 7. Costs were higher among Es at both time points: $3,112 at Baseline and $7,386 at Wave 7.

J2SI Phase 2 Program – Justice System Interaction and Costs

Interaction with the justice system was relatively low among both J2SI Phase 2 clients and control group participants, at both Baseline and Wave 7. The exception to this is the number of nights spent in prison: there was a large increase in the average reported number of nights spent in prison at Wave 7 relative to Baseline.

The increase in the number of nights spent in prison led to increased overall justice costs between Baseline and Wave 7 for both groups.

Economic Participation

The majority of both Js and Es in the matched sample were not participating in the labour force at Baseline or Wave 7, mostly due to inability to work as a result of health conditions or disability. With respect to change between Baseline and Wave 7, there was a slight increase in the proportion of Js and a slight decrease in the proportion of Es participating in the labour force, though more Es than Js were working or actively seeking work at both time points. The proportion of Js in the matched sample that were employed increased from 2.7% at Baseline to 8.1% at Wave 7, and the proportion of Es that were employed increased from 3.8% at Baseline to 11.3% at Wave 7. Among Js there was also an increase in unemployment between Baseline and Wave 7 while for the E group there was a decline in unemployment. In other words, between the Baseline and Wave 7 there was a greater engagement with the labour market on the part of the J group with some of this engagement resulting in a transition to employment and some resulting in more active job-seeking.

In line with the results regarding labour force participation, both Js and Es in the fully matched sample were generally unsatisfied with their employment readiness, employment outcomes, and outcomes with respect to finances. The average satisfaction with employment readiness over the seven survey waves for Js was 2.8/5 (min: 2.4, max 3.2). Similarly, the mean satisfaction with employment readiness for Es was 2.8/5 (min: 2.2, max: 3.2). Results for satisfaction with employment outcomes were very similar to those for employment readiness (mean: 2.5 for both Js and Es over the seven survey waves). Mean satisfaction with finances was 2.6 for Js and Es. Satisfaction among Js in the fully matched sample with the support received from the J2SI Phase 2 program for economic participation dimensions was 3.4/5 for finances, 3.5/5 for employment, and 3.6/5 for employment readiness.

J2SI Phase 2 Program – Economic Participation

There was an increase in the number of J2SI clients who transitioned to paid employment at Wave 7 compared to Baseline and a greater proportion of J2SI clients were actively engaged in the labour market through job-seeking activity.

However, the vast majority of clients remained not in the labour force or unemployed. Most did not feel ready to enter the labour workforce and most felt unsatisfied with their financial resources.

Social Connectedness, Social Support and Quality of Life

The transition from homelessness to housing can leave those housed with fewer social connections than before. Part of a holistic social inclusion program is to ensure that this does not occur. Hence, we were interested in investigating the extent to which the J2SI Phase 2 program led to higher or lower rates of loneliness and lower social support over time. We are also interested in the extent to which participants experienced an overall increase in their quality of life over the period of the study.

Loneliness, measured using the UCLA 3-item loneliness scale, actually decreased slightly between Baseline and Wave 7 among both Js and Es in the matched sample (from 7.2 and 6.8, respectively, at Baseline, to 6.7 and 5.9, respectively, at Wave 7). In line with this, Scores of Social Support increased slightly for both Js and Es between Baseline and Wave 7, from 26.6 to 27.5 for Js and 26.6 to 32.1 for Es.

Scores in the physical health, psychological, and environment domains on the World Health Organisation Quality of Life – Brief (WHOQOL-BREF) questionnaire increased for both Js and Es between Baseline and Wave 7, while scores on the social relationships domain remained stable for Js and increased for Es between Baseline and Wave 7.

In terms of satisfaction with social connections and social participation, Js in the fully matched sample were neither satisfied nor dissatisfied (means of 2.9 and 2.8, respectively, across the seven survey waves). Es in the fully matched sample were marginally more satisfied than Js with their social connections and social participation (means of 3.1 and 3.0, respectively, across the seven survey waves).

J2SI Phase 2 Program – Social Support and Quality of Life

J2SI Phase 2 clients' feelings of loneliness decreased and experience of social support increased between Baseline and Wave 7.

There were improvements in quality of life outcomes using the World Health Organisation Quality of Life instrument across most domains for the J2SI Phase 2 client group.

There was little change in J2SI clients' satisfaction with social connections and social participation.

Cost Benefit Analysis

Analysing the cost of changes in self-reported health and justice service utilisation among the J group in the annual matched sample, the total cost savings associated with the reduction in overall health service usage amounted to $37,700 (2015-16 dollars) per J group participant over the course of the program, while justice costs increased $5,407 per person. This cost saving is relative to the case if health service utilisation had remained at Baseline levels. Therefore, total cost savings with respect to health and justice service utilisation over the course of the J2SI Phase 2 program are estimated at $32,293 per J group participant.

Taking this estimated cost saving and dividing it by the cost per client of administering the J2SI Phase 2 program ($62,475 or $17,850 per client per year in 2015-16 dollars,), we arrive at a benefit-cost ratio of 0.52. This means that, for every $1 invested in the J2SI program, $0.52 is returned in government health and justice cost savings over the 3 years of the program. The program "pays" for itself in less than 6 years.

Examining the differential change per client in cost of health and justice service access (by subtracting the cost (savings) of Es ($66,335) from the cost (savings) of Js), there is a differential saving of $98,627 over the course of the program/study. The differential cost of treatment (cost of J2SI Phase 2 – cost of treatment as usual ($8,881)), J2SI Phase 2 costs an additional $53,594 per client relative to treatment as usual. In other words, for an additional $53,594 per client, J2SI Phase 2 has delivered a differential saving of $98,627 per client over the course of the program in health and justice costs, according to the self-report survey data. This is a benefit cost ratio of 1.84:1.

J2SI Phase 2 Program – Health and Justice Cost Offset Analysis

J2SI program costs aside, the combined heath and justice cost savings are estimated at $32,293 per J group participant.

Taking into account J2SI program costs, it is estimated that for every $1 invested in the J2SI program, $0.52 is returned in health and justice cost savings.

The combined heath and justice cost costs are estimated at $66,335 per E group participant.

Taking account J2SI program costs and the cost of treatment as usual, it is estimated that for every $1 invested in the J2SI program, $1.84 is returned in health and justice cost savings compared to the control group (E group).

Conclusion

This report presents results from the randomised control trial study of the Journey to Social Inclusion Phase 2 program. The results presented are derived primarily from analyses of surveys of participants that occurred at six-monthly intervals.

The study measures change over time across a range of domains of well-being among participants that received support from the J2SI Phase 2 program, as well as a control group who accessed services as usual.

We find that, between Baseline (recruitment into the study) and Wave 7, there is general improvement among both Js and Es across most domains. In particular, participants that received support from the J2SI Phase 2 program reported markedly improved outcomes, both relative to their Baseline outcomes and the outcomes of the control group, with regard to their housing, drug and alcohol use, and hospital use. Overall, considering the cost of service delivery (J2SI and services as usual) and participants' self-reported change in health and justice services, a cost-benefit analysis estimates that for each dollar invested in the J2SI Phase 2 program, $1.84 is returned in health and justice cost savings.

1. INTRODUCTION

This report presents findings from the Journey to Social Inclusion (J2SI) Phase 2 research study focusing on changes in outcomes of participants from the beginning of the J2SI Phase 2 program to its end. It follows the release of the Baseline Report in 2017, which described the characteristics of study participants (Miscenko et al., 2017), and the Year 1 report in 2018 (Flatau et al. 2018), which provided preliminary results of participants' wellbeing across a number of domains. The J2SI Phase 2 research study is a mixed-method, multisite randomised control trial that is following the progress of 179 adults (excluding 6 participants found ineligible and one who withdrew from the study) experiencing chronic homelessness in Melbourne over a four-year period. An analysis of qualitative interview data relating to the J2SI Phase 2 research study is provided in the companion report by the research team published concurrently: A Qualitative Study of Sacred Heart Mission's Journey to Social Inclusion (J2SI) Phase 2 Program: Experiences and Perspectives of J2SI Study Participants (Thielking et al. 2020).

The J2SI Phase 2 is a program developed and delivered by Sacred Heart Mission (SHM). The J2SI Phase 2 program builds on the pilot J2SI program undertaken between 2009 and 2012 (Johnson & Tseng, 2010; Johnson et al., 2011; Johnson et al., 2012; Johnson et al., 2013; Johnson et al., 2014; Parkinson, 2012; Parkinson & Johnson, 2014). The J2SI service model differs markedly from standard approaches supporting those experiencing homelessness in its low client-staff ratio (6:1) and dedicated three-year intervention. It aims to break the cycle of chronic homelessness by providing rapid access to sustained permanent housing and improving the health, wellbeing and social outcomes of participants. The program takes a relationship-based, trauma-informed and strengths-based approach in the context of long-term assertive case management. J2SI focuses on capacity building and skills-based support to assist clients to maintain tenancies, gain training and employment, and establish stronger social connections as well as independence. Section 2 provides further detail about the J2SI Phase 2 program design and the principles underpinning it.

Participants in the J2SI Phase 2 research study were recruited from services that support individuals experiencing homelessness in Melbourne, Victoria, and were randomised, following the Baseline survey, to the J2SI Phase 2 intervention or homelessness support as usual. Those randomised to the J2SI Phase 2 intervention comprise the 'treatment group' and are referred to as the J group, while those randomised to receive existing homelessness services (i.e., services as usual) are the 'control group', referred to as the E group. Where those randomised to the J group subsequently left the geographical scope of support or could not be contacted by the J2SI Phase 2 support team or were deemed not to have engaged in the program, they were categorised as 'inactive'. They form the 'I group'. Those in the J group that received J2SI program support for at least three months are considered to be part of the treatment group, even if they disengaged from SHM prior to the program completion. Participation in the study was voluntary and all participants provided written, informed consent.

Highlighting the scale of the problem of homelessness in Australia, the Australian Bureau of Statistics (ABS) estimates that over 116,000 people in Australia resided in accommodation (or lack thereof) that characterised them as homeless on Census night in 2016 (ABS, 2018). Census data provide a count and demographic profile of people who are experiencing homelessness. However, Census estimates of homelessness do not shed light on the issue of chronic homelessness, the journeys of individuals who experience homelessness, nor the impact of support services on those journeys. It is precisely these latter issues—the journeys to 'social inclusion' of those who experience chronic homelessness and the effectiveness of the J2SI Phase 2 program—that are of primary interest in the J2SI research study.

The J2SI Phase 2 study utilises the 'cultural definition of homelessness' (Chamberlain & MacKenzie, 1992, 2003, 2008). Under the cultural definition, homelessness is defined as a state in which individuals do not have access to the minimum accommodation standards that Australians believe all have the right to expect. Homelessness is further classified as primary homelessness (i.e., sleeping rough), secondary homelessness (i.e., emergency and crisis accommodation, women's refuges, youth refuges, transitional supported accommodation, caravan parks, couch surfing as a result of having nowhere else to sleep), and tertiary homelessness (i.e., boarding houses with shared kitchen and bathroom facilities and no secure tenure). The current ABS definition of homelessness differs from the cultural definition of homelessness used in the J2SI Phase 2 research study, as the former includes those who are conventionally housed, but whose dwelling is inadequate in that it does not allow the individual to have control of, or access to, space for social relations, such as is the case in severely overcrowded dwellings (Flatau et al., 2018).

For the purposes of the study, chronic homelessness is defined as either rough sleeping (i.e., primary homelessness) for 12 months continuously at some point in the past and/or at least 3 episodes of any form of homelessness (i.e., primary, secondary and/or tertiary homelessness) in the last three years. Analysis of Australia's Registry Week data, which is comprised of the VI-SPDAT results of individuals rough sleeping or being supported in crisis accommodation or other forms of non-tenured housing interviewed by service delivery agencies across Australian cities over the period 2010-2017 provides some insights into the extent of chronic homelessness in Australia. Among the 7,039 individuals

who answered the question, "What is the total length of time you have lived on the streets or emergency accommodation?" the average duration of primary homelessness was 5.1 years (Flatau et al. 2018).

There are many known structural and individual determinants of homelessness. Structural determinants include shortages of affordable housing, high unemployment, and poverty (Shinn & Weitzman, 1990; Elliott & Krivo, 1991; Early, 2005; Nooe, 2010). Physical health conditions (Hwang, 2001; Fazel, Geddes, & Kushel 2014), mental health conditions such as substance use disorders (Fazel et al. 2008, Spicer et al. 2015, Teesson, Hodder, & Buhrich 2000;), and parental and family violence (Buhrich, Hodder, & Teesson 2000; Flatau et al. 2012), are key individual-level determinants of homelessness, both nationally and internationally (O'Donnell et al. 2014; Conroy et al. 2014; Miscenko et al. 2017). The experience of homelessness compounds (and may generate) these individual-level risk factors. For example, an individual with a chronic health condition who becomes homeless may be unable to afford the medication and treatment necessary to manage their condition. Moreover, substandard living conditions while homeless may exacerbate their symptoms, further inhibiting their daily function and creating additional barriers to exiting homelessness. Recognition of the complex needs of the homeless population contributed to the holistic, intensive design of the J2SI Phase 2 program created by SHM.

The J2SI research study measures changes across a number of domains of social and economic wellbeing. In addition to a compromised quality of life among individuals experiencing homelessness, there is a wealth of evidence that systems of service delivery, including the health, justice, and welfare systems, incur substantial costs as a result of homelessness (Flatau et al. 2008; Flatau & Zaretzky, 2008; Zaretzky, Flatau, & Brady, 2008; Poulin et al. 2010; Hwang et al. 2011; Hwang et al. 2013; Zaretzky et al. 2013; Wood et al. 2016; Parsell, Petersen, & Culhane, 2016; Zaretzky et al. 2017). Examination of both individual and system effects serves to both improve understanding of the journeys of individuals who experience chronic homelessness and to evaluate the full impact of the J2SI Phase 2 program on its participants and broader social systems. In particular, it aims to evaluate changes in utilisation of various government and public health services and the associated costs or cost savings associated with these changes among J2SI Phase 2 participants, relative to participants who receive services as usual.

The objectives of the J2SI Phase 2 research study are to:

- Describe histories, needs, circumstances and pathways of those experiencing chronic homelessness in Melbourne;
- Assess the impact of the J2SI Phase 2 program implemented by SHM compared to that derived from existing service provision in the following domains: education, employment and income; social inclusion; mental health; physical health; housing; and, service usage;
- Examine the cost of the J2SI Phase 2 program compared with existing service provision and assess the overall cost-effectiveness of the J2SI Phase 2 program (accounting for differential cost offsets); and,
- Provide a framework for scaling up the J2SI intervention pending positive evaluation findings.

To achieve these objectives, the study utilises a mixed-methods design, including quantitative surveys administered to participants every six months for three years; qualitative interviews with a smaller, randomly selected segment of the sample and case workers; and the linkage of Victorian and Australian Government administrative data.

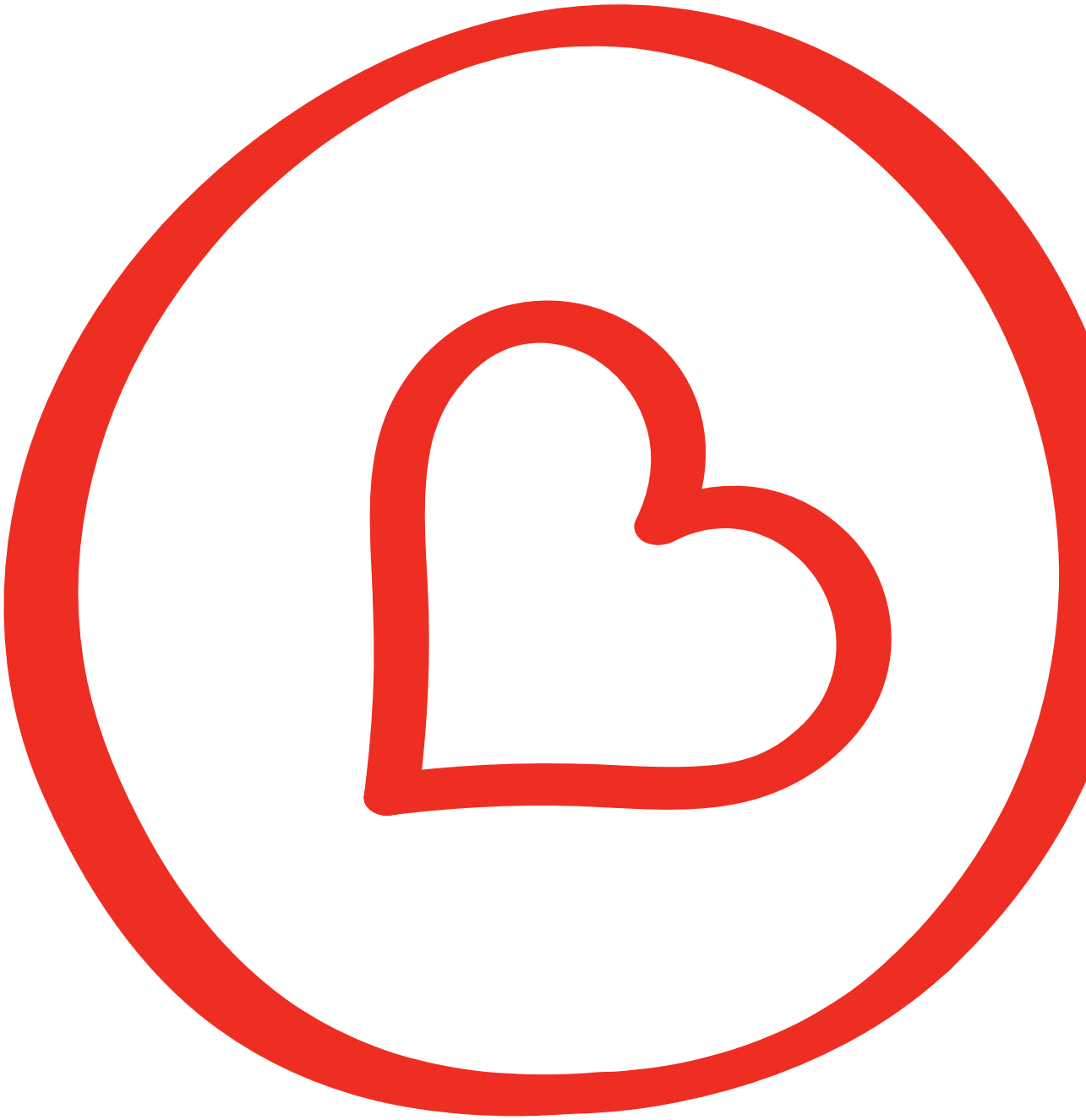
The present report is the final of three to be published from the J2SI Phase 2 research study. The first report, Miscenko et al. (2017), provided a detailed description of the design of the J2SI Phase 2 research study, sample recruitment, and participant histories and characteristics. It also provided an overview of Baseline results, such as mental health symptoms and self-reported health service utilisation. In the second report, Flatau et al. (2018) outlined participants' journeys during the first year of the study. This final report in the series examines the overall effectiveness of the J2SI Phase 2 program and its cost-effectiveness over the three years of operation.

In this report, we present findings from surveys that were completed by respondents during the first three years of the J2SI Phase 2 research study. The period from January to September 2016 comprised assessment of eligibility for the program and research study, recruitment and consent, completion of the Baseline survey and randomisation to the J2SI Phase 2 program or to services as usual. Wave 2 data collection commenced six months after the start of the Baseline wave and took place between July 2016 and May 2017. Wave 3 took place between January and December 2017 and assessed participants' progress one year on from the start of the research study. The Wave 4 survey ran between July 2017 and June 2018; Wave 5 took place between January 2018 and January 2019; Wave 6 was undertaken between August 2018 and September 2019; and Wave 7 surveys were taken between January and October of 2019.

In order to avoid potential impacts on the treatment of J2SI study participants, the Year 1 report (Flatau et al. 2018) did not compare outcomes between the J group and E group. Now that the program has concluded, this final report presents and discusses results for both groups, and examines the potential factors affecting the results. Section 3 outlines the research methodology in greater detail, including information about the sampling over time, and the methods of disaggregation for comparison between groups.

Outcomes related to the following domains will be assessed:

- Housing
- Health (physical health, mental health, alcohol and other drug use)
- Health service utilisation
- Justice
- Economic participation
- Social support
- Quality of life



2. THE J2SI PHASE 2 PROGRAM

Building on the strong housing outcomes of the J2SI pilot program, J2SI Phase 2 aimed to address homelessness by facilitating the movement of chronically homeless people in Melbourne into permanent, stable housing. Central to the J2SI model is recognition that the social inclusion of chronically homeless (or formerly chronically homeless) individuals requires navigation of housing opportunities and of the service system (e.g., homelessness services, health services, alcohol and other drug services, education, and employment). Without assistance those experiencing homelessness are likely to face significant barriers which may hinder or often directly stop access to housing and service support. Accordingly, J2SI Phase 2 participants were provided with three years of support across five service delivery elements: intensive case management and service coordination; housing access support, tenancy support and capacity building to maintain housing; trauma-informed practice; building skills for inclusion; and fostering independence.

The J2SI Phase 2 model is underpinned by four service principles. First, that the recovery process is relationship-based, individualised and client-driven. This principle positions the client as an active participant in their recovery rather than a passive recipient of services. A strong emphasis is placed on building strong and trusting relationships through life's ups and downs.

The second service principle is based on a trauma-informed, strengths-based recovery approach that promotes hope, to have the best chance of success. The homeless population experiences elevated rates of trauma. Integrating into the service response an understanding of trauma and the range of reactions an individual can have to it, is key to enabling access to therapeutic responses (as determined by the individual). These therapeutic responses help to manage the impact of trauma which is key to mitigating the barriers to exiting homelessness that trauma can create. A strengths-based approach, where all support and engagement is underpinned by a belief that all people have the capacity to learn, grow, and change, is key to developing the trust required for the J2SI program to work.

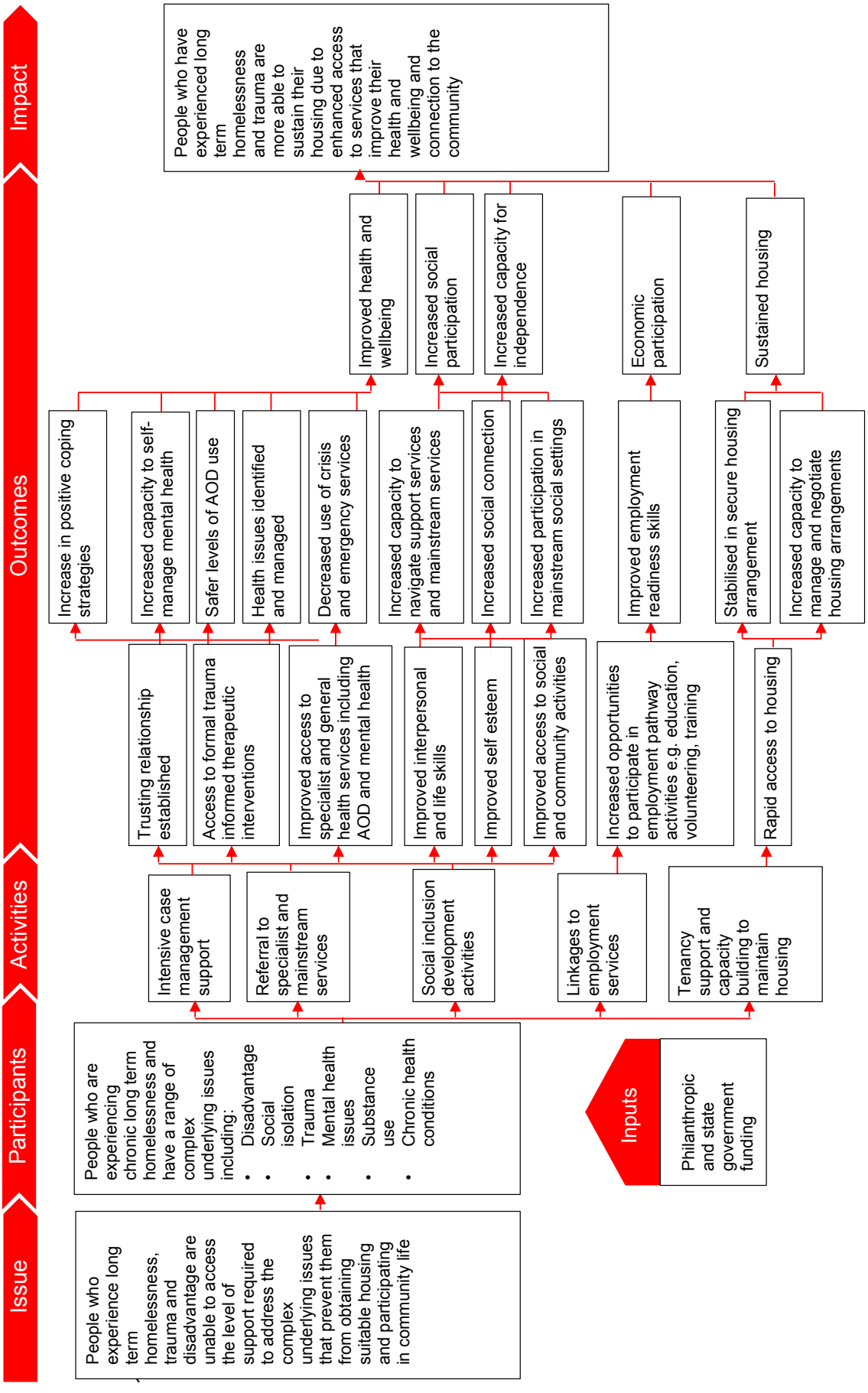
The third service principle is that sustained housing and management of complex health issues are key enablers of recovery and inclusion. This principle illustrates the program's alignment with the Housing First principles, which view housing as a first step on the path to recovery (rather than a goal to 'work up' to). It also demonstrates the program's recognition of the time that the journey to recovery can take, as well as the range of different challenges that need to be navigated on that journey, with a particular focus on health.

The fourth principle of the J2SI Phase 2 model is that the approach builds capacity for independence and skills for inclusion. The fostering of independence and encouragement of help seeking through services is critical to an individual's success beyond the support period offered by the program.

Prior to the commencement of J2SI Phase 2, SHM articulated a clear program logic linking the intervention to its anticipated outcomes (see Figure 1 below). The impetus for the J2SI program is clear: chronic homelessness and the issues surrounding it, including trauma, mental health issues, substance use, chronic health conditions, and social isolation, are complex and persistent, and prevent people from being able to participate in community life.

As discussed in our accompanying J2SI Phase 2 A Qualitative Study of Sacred Heart Mission's Journey to Social Inclusion (J2SI) Phase 2 Program: Experiences and Perspectives of J2SI Study Participants (Thielking 2020), Phase 2 employs a three-phased approach through the three-year intervention. This involves clients building trust and engagement with a key worker in the first phase, a transition to a broader team approach in the second and in the third phase a shift to relationships with services within the broader community.

Figure 1 **Journey to Social Inclusion Program Logic (adapted from Sacred Heart Mission presentation)**



To address this, J2SI Phase 2 sought to provide intensive case management support, referral to specialist and mainstream services, social inclusion development activities, linkages to employment services, and tenancy support and capacity building to sustain housing. Arising from these activities, SHM expected that clients would form a trusting relationship with their case managers, have increased access to therapeutic and specialist interventions, improved life skills and self-esteem, increased access to social and community activities, increased opportunities with respect to employment pathway activities (such as education, training, volunteering), and rapid access to housing. This would then lead to increases in positive coping strategies and capacity to self-manage mental health, safer use of alcohol and other drugs, management of health issues, decreased use of crisis and emergency services, increased ability to navigate support systems, increased social connection and participation, increased employment readiness, and stable, secure housing and an increased ability to manage one's tenancy. These outcomes culminate in improved health and wellbeing, increased social participation, increased capacity for independence, economic participation, and sustained housing.

The development of the J2SI Phase 2 program built on the recommendations from the J2SI pilot program and provided a stronger platform for the program going forward (Johnson & Tseng, 2010; Johnson et al., 2011; Johnson et al., 2012; Johnson et al., 2013; Johnson et al., 2014; Parkinson, 2012; Parkinson & Johnson, 2014). The most important change was to move to a systems approach to the model built on key strategic partnerships. The most important and effective of these was in relation to housing. Strategic partnerships were developed with Victorian public housing and community housing providers in to increase the supply of housing to enable rapid housing of J2SI program participants.

The J2SI Phase 2 program expanded the range of networked services relative to the J2SI Pilot program across a range of domains. In the Pilot program there was emerging awareness of the impact of trauma for those experiencing chronic homelessness. This led to SHM being involved in the Trauma and Homelessness Initiative (see O'Donnell et al. 2014) and the embedding of trauma-informed practice in the J2SI Phase 2 program through a Trauma Informed Case Management Framework. Individualised funding was also provided for clients to access specialist therapy with providers of their choice and a model of clinical supervision with an external partner implemented as part of a robust staff support package that included line supervision, clinical supervision and group reflective practice.

The J2SI Pilot program did not have a formal Alcohol and Other Drugs (AOD) partnership model. In the J2SI Phase 2 program formal partnerships were developed with AOD providers to enable better referrals and links to AOD services, training for key workers, and consultation.

The J2SI Pilot included a Building Up and Developing Skills (BUDS) worker and employment consultant as part of the team. In the J2SI Phase 2 program, an external partnership with an employment service for an employment worker role was developed.

The J2SI Phase 2 program also expanded its size (40 clients to 60 clients), demonstrating the model could be delivered successfully on a larger scale and more cost-effectively with case load increasing from 1:4 to 1:6. While the staff case load rose in the J2SI Phase 2 program, there was a change in the model by supporting key workers in a team and broader community environment. The J2SI Phase 2 program also expanded the geographic scope beyond the Inner South (primarily St Kilda) area covered by the Pilot to the Inner North area (primarily North Melbourne and City of Yarra) demonstrating that the model could be replicated across metropolitan Melbourne with partner organisations, and across new service systems. These referral partnerships developed through the J2SI Phase 2 program and represent some of Sacred Heart Mission's strongest partnerships.

The J2SI Phase 2 program was developed significantly from its Pilot program. At the same time, 'treatment as usual' for those experiencing homelessness was also significantly augmented in Melbourne during the period of the J2SI Phase 2 program. In effect, this meant that the difference between the support provided to those experiencing homelessness who were in the J2SI Phase 2 program and the support available to those not in the program potentially narrowed. Key programs implemented in Melbourne by the Victorian Government during the J2SI Phase 2 program included:

- **Towards Home Funds** is a program implemented by the Victorian Government specifically for chronic homelessness/ rough sleepers, which provided immediate, dedicated access to 40 transitional housing units across Melbourne with a guaranteed pathway to permanent supportive housing with case management and targeted supports for an immediate 40 vulnerable rough sleepers for up to 2 years to help them maintain their housing (see: Housing Victoria, 2020).
- **Adult crisis accommodation reforms** led to a longer term continuum of care, and extended support pathways for clients to enable improved housing and health outcomes. Importantly, there was a change from 6 weeks case management support to up to 12 months, and links to other supports.
- **Rough Sleeper Action Plan** included $19 million to establish assertive outreach teams across the state including Melbourne CBD, $9 million to develop six supportive housing teams to tackle chronic homelessness and the delivery of individual support to rough sleepers once they are housed, $4.5m for therapeutic services in major inner city crisis accommodation centres; and $13 million for an additional 106 accommodation units and onsite support (see: Department of Health and Human Services, 2018; Foley, 2018).

- **Rapid Housing and Homelessness Funding:** In March 2016 $152 million committed to the Family Violence Housing Blitz for new units of crisis accommodation and rapid housing options for women and children escaping family violence as well as private rental assistance to help women and children to access housing in the private rental market. In September 2016, $24 million was announced to extend the rapid housing initiative to increase the supply of housing for people sleeping rough and the chronic homeless and in May 2017, $133 million was announced for long-term housing, more rental assistance, improved crisis accommodation and better support for people fleeing family violence.
- Victorian Government service reform in the AOD and mental health area as well as the rollout of the National Disability Insurance Scheme (NDIS) which overlapped with the J2SI Phase 2 program including the New directions for alcohol and drug treatment services: A framework for reform, the Ice Action Plan, the Drug Rehabilitation Plan (see: Department of Health and Human Services, 2013) and the 10 year mental health plan: 2009 – 2019. (see: Department of Health and Human Services, 2009).
- **Trauma-informed care:** The J2SI Pilot incorporated trauma-informed care and this was considerably extended in the J2SI Phase 2 program but more specialist homelessness services in Victoria were also moving to more trauma-informed service delivery through the period of the J2SI Phase 2 program.

3. RESEARCH METHODOLOGY

The mixed-methods research design adopted in the J2SI Phase 2 research study includes the collection of longitudinal survey data from study participants (i.e., J2SI Phase 2 program and 'services as usual' groups), qualitative interviews with a random sample of study participants from both groups, semi-structured interviews with J2SI Phase 2 service providers, and linked administrative data from Victorian and Australian Government agencies.[1]

The present report captures findings from seven, six-monthly waves of the longitudinal survey, from Baseline to Wave 7 (three years) with a focus on comparing Baseline and Wave 7 and Baseline and yearly survey responses. In addition, some insights from the qualitative interviews with participants and case workers are presented (for the full qualitative report, see Thielking et al. 2020), as well as analysis of linked administrative data pertaining to hospital bed days and public housing, provided by the Centre for Victorian Data Linkage.

To be eligible for the J2SI Phase 2 research study participants had to:

- Be aged 25-50 years, be permanent residents of Australia, have Centrelink entitlements, and not be engaged in an existing long-term intensive homelessness support program; and,
- Have experienced chronic homelessness in their lifetime (i.e., sleeping rough continuously for the previous 12 months or at least three episodes of homelessness in the previous three years); and,
- Be currently experiencing homelessness (primary, secondary or tertiary), or housed for six months or less and at risk of homelessness due to having received a notice to vacate or a breach of tenancy notice without a secure housing option available.

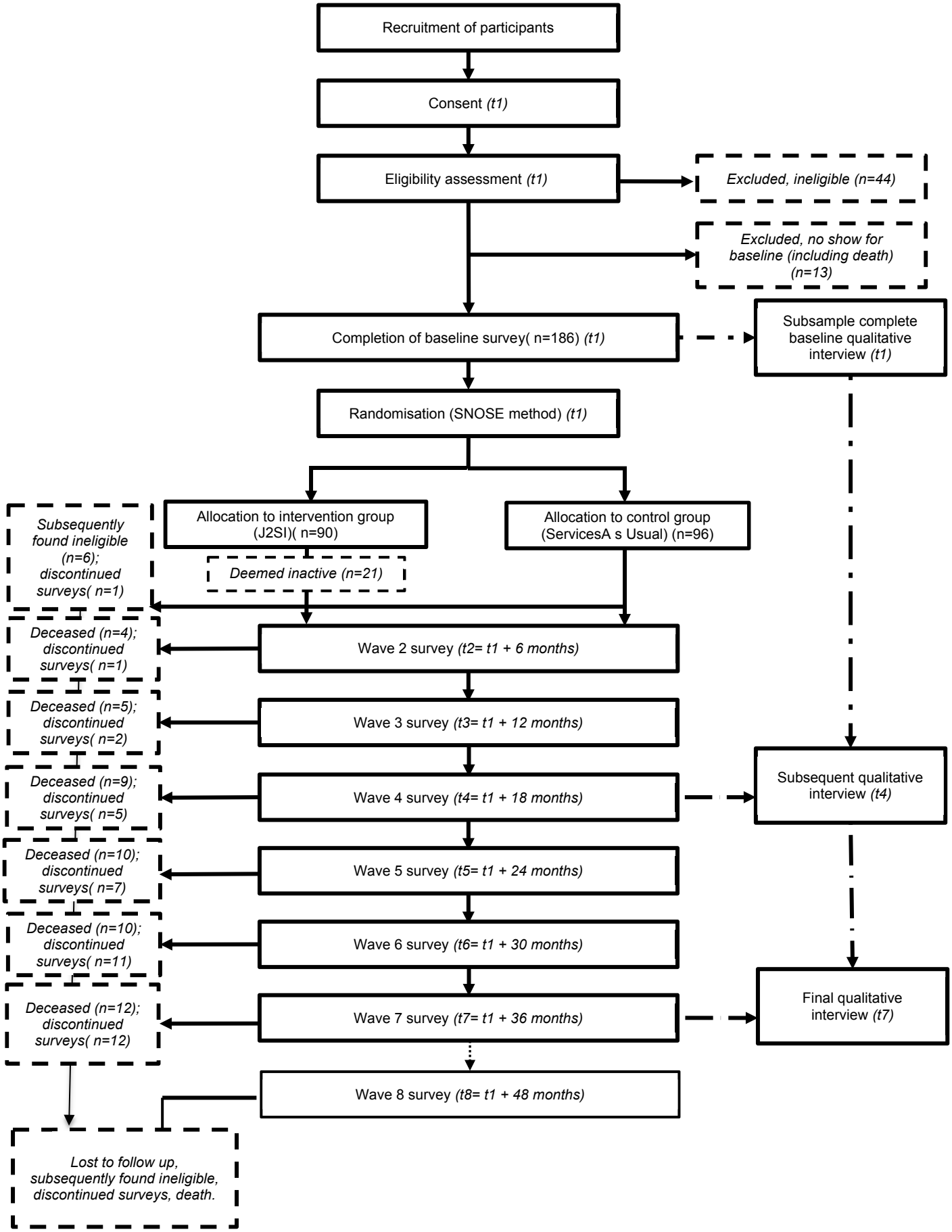
Potential participants who otherwise may have been eligible for the study were excluded from the research if they:

- Could not speak English fluently (as budget constraints precluded the hiring of interpreters for ongoing service delivery); or,
- Had unmanaged mental illness that was severe enough to prevent the provision of informed consent; or,
- Posed an identifiable safety threat to themselves or others that was unable to be managed by the service; or,
- Were for any reason unable to give informed consent or participate fully in the study.

Participants in the study who provided written, informed consent were first assessed for eligibility against the above criteria and, if eligible, completed a Baseline survey and were then randomised to the J2SI Phase 2 program (J group) or to services as usual (E group). Randomisation outcomes were determined through a simple shuffled envelope system in line with the recommendation of SHM that this system would be more acceptable to clients than computerised randomisation. It is important to note that, due to recruitment occurring via service delivery agencies, respondents in the E group would be expected to continue to receive existing support where eligible and where sought. However, they may choose not to engage, or to engage on a less consistent basis, therefore they may not always and at all times be receiving support.

1 The study received ethics approval on 8 December 2015 from The University of Western Australia Human Research Ethics Committee (RA/4/1/7904) and on 9 27 April 2016 from the Swinburne University Human Research Ethics Committee (2016/084) as well as ethics approvals to access linked administrative data. The Randomised Control Trial was registered with the Australian New Zealand Clinical Trials Registry ACTRN12616000162415.

Figure 2 CONSORT Flow diagram of J2SI research study participants



In adherence to guidelines for ethical human research, participants could withdraw from the study at any time. If participants informed their interviewer or any member of the research team that they wished to stop participating in six-monthly interviews, participants could choose whether they wanted to discontinue their participation in future survey waves and/or whether they wanted to fully withdraw from the study and have the survey data already collected from them excluded from analysis.

The initial target sample size was 60 J group participants and 70 E group participants, with the latter group slightly larger in anticipation of a higher attrition rate. SHM found that some J group participants did not engage with the program or moved outside the zone in which they could provide support, so the study continued to recruit participants to reach the original target of engagement. At the conclusion of the recruitment round, 90 participants had been randomised to the J group and 94 were randomised to the E group. After recruitment, eight J group participants moved outside of the geographic scope of the program and 13 could not be contacted in the three months after their Baseline interview. These participants were categorised as 'inactive' (I group). Six J group participants were deemed to be ineligible after Baseline due to currently receiving or having recently received long term homelessness support. Therefore, the final Baseline sample is comprised of 85 J group participants, 65 of whom were active participants in the J2SI program, and 94 E group participants, one of whom discontinued but consented to their Baseline data being used.[2] [3] This participant was not contacted for subsequent waves of the study. The CONSORT flow diagram in Figure 2 outlines the recruitment and attrition of participants through the study. Only one participant requested a full withdrawal from the evaluation.

All J group participants that received at least three months of support from the J2SI program are considered to be part of the J group, even if they disengaged from the J2SI program prior to the completion of the program. Five participants disengaged from or had no further contact with the J2SI Phase 2 program from end 2017 onwards and a further four participants partially engaged with the program (three of whom died during the study).

A total of 662 surveys were conducted with study participants between 2016 and 2019 over seven waves of data collection for the J2SI Phase 2 research study. Table 1 outlines the dates of each data collection wave, the number of participants who withdrew or died prior to survey completion for that wave, and the number of surveys completed. Excluded from the number of valid surveys completed for the Baseline are six respondents who were randomised to the intervention group but were later determined by SHM J2SI Phase 2 support team to be ineligible to participate in the study.

There are considerable difficulties in following homeless participants over time. Unstable accommodation and other factors associated with this state mean contact details may no longer be valid at the point of follow up and/or participants are unable to be located. The research team implemented intensive follow-up processes to ensure that respondents can be contacted, even where contact details are no longer up-to-date, including leveraging respondent consents to be able to contact services in the metropolitan area to enquire as to participants' whereabouts. Further, we cannot draw any conclusions about the impact of J group participants that disengage from and/or reengage with the J2SI program on the response rate for each wave. Nevertheless, excluding those who are known to have died and those who discontinued participation in the six-monthly surveys, 55 participants (35.3%) that were eligible to complete the Wave 7 survey did not complete it. This represented an increase in the response rate from the preceding waves – 41.5% of eligible participants in Wave 6 and 36.8% in Wave 5 did not complete the respective surveys.

2 Flatau et al. (2018) correctly reported results from 180 Baseline respondents. Since the publication of the Year 1 report, one research study participant has elected to fully withdraw from the study, including withdrawal of consent for their previously collected data to be used in future publications. Therefore, in accordance with our ethical protocol approved by The University of Western Australia Human Research Ethics Committee (Ref: RA/4/1/7904), this report excludes the withdrawn participant's data.

3 It was reported in Miscenko et al. 2017 and Flatau et al. 2018 that 20 clients became inactive after recruitment. A review of J2SI Phase 2 program information during production of this report revealed another participant that became inactive within three months of their recruitment.

Table 1 Data collection dates and survey numbers

Wave of data collection	Dates	Deaths prior to survey wave	Discontinuations prior to survey wave	Adjusted potential sample size*	Number of valid surveys completed	Response rate
Baseline (Wave 1)	8 January 2016 - 30 September 2016	-	-	-	179	-
Wave 2	8 July 2016 - 30 May 2017	4	1	175	121	69.1%
Wave 3	5 January 2017 - 11 December 2017	5	2	173	135	78.0%
Wave 4	6 July 2017 - 19 June 2018	9	5	166	109	65.7%
Wave 5	15 January 2018 - 8 February 2019	10	7	163	103	63.2%
Wave 6	3 August 2018 - 2 May 2019	10	11	159	93	58.5%
Wave 7	18 January 2019 - 31 October 2019	12	12	156	101	64.7%

*Excludes deaths and withdrawals from total Baseline sample. One of the participants who elected to discontinue their participation in surveys, subsequently died, which is why 13 deaths have been reported elsewhere in this report.
Source: J2SI Phase 2 Baseline and Wave 3 Survey

Table 2 breaks down the number of respondents in each group in each six-monthly wave of survey data collection. In Wave 7, 101 valid survey responses were collected – 37 Js, 53 Es, and 11 Is. Due to the chronic homelessness and associated trauma and other life experiences encountered by the J2SI research study participants, this attrition was expected and is attributable to a range of factors, including participant death, discontinuation of participation in the research study, and loss to follow-up. A total of 51 participants (23 J group and 28 E group (no I group participants) completed all seven waves of data collection, while 72 participants (31 J group, 37 E group and 4 I group) completed the annual surveys (Baseline, Wave 3, Wave 5 and Wave 7).

Table 2 Survey response numbers, by randomisation outcome, by survey wave

	Baseline	Wave 2 6 months	Wave 3 12 months	Wave 4 18 months	Wave 5 24 months	Wave 6 30 months	Wave 7 36 months
J (n)	64	52	60	47	42	37	37
E (n)	94	66	60	54	55	51	53
I (n)	21	5	15	8	6	5	11
Total (N)	179	123	135	109	103	93	101

Therefore, this report presents results for both the whole samples for each wave by J and E, and for a matched sample of those participants that completed both Baseline and Wave 7 (n=101), disaggregated by randomisation outcome (J versus E versus E and I). In addition, where appropriate, the results of the fully matched (those that completed all seven surveys) or annual matched (those that completed the annual surveys) samples are presented.

Inclusion of the I group is limited to the matched sample for a number of reasons. First, although those in the I group were randomised to the J2SI program initially, and their ongoing outcomes are of interest, they did not engage with the program to a large enough extent (if at all) or could not because of their geographical location to be considered part of the treatment group. However, because the reasons for becoming inactive vary, Is also do not necessarily fit the definition of the control group. Further, the number of responses from Is in each wave varies substantially, and not one I participant completed every wave of the survey. Therefore, in order to maximise the consistency of comparison of outcomes over time (i.e., ensure that changes within and between groups over time are observed between the same groups), Is are excluded from trend analysis and their results are not presented as a separate group. For clarity, Table 3 provides a brief glossary of terms used to refer to the samples covered in this report.

It should be noted that none of the nine J participants (including three who died during the course of the study)

who either disengaged from the J2SI Phase 2 program or partially engaged in the program post the initial three month point that determined the I group are in the fully matched or annual matched samples while only one is in the matched sample.

Table 3 Terms used to refer to groups of participants in this report

Term	Definition
Baseline sample	All eligible participants that completed a Baseline survey
Matched sample	Participants that completed both the Baseline and Wave 7 surveys (n=101, 37 Js, 53 Es and 11 Is). Results are presented by 3 groups: J, E, and E and I.
Fully matched sample	Those participants that completed all seven surveys (Baseline to Wave 7, inclusive) (n=51, 23 Js, 37 Es). Results are presented by J and E.
Annual matched sample	Participants that completed every annual wave of the survey (Baseline, Wave 3, Wave 5, and Wave 7) (n=72, 31 Js, 37 Es, 4 Is). Results are presented by J and E.

This report also presents analysis of linked administrative data pertaining to hospital bed days (a measure of general hospital use and stays in specialised mental health units in the Victorian Admitted Episodes Dataset (VAED)) and public housing tenancies (from the Housing Integrated Information Platform). There are some important differences between linked administrative data and self-report data that prohibit direct comparison of results from each source, and must be noted when interpreting results from either source.

First and foremost are the compositional differences of the samples; while survey data is subject to changing sample sizes and attrition bias over time (i.e., the reduction in sample size changes the characteristics of the groups being studied), linked administrative data represents a consistent sample over time (those that consented to having their government administrative data linked to their survey data at the beginning of the study, and did not subsequently withdraw that consent).

Second, self-report data is subject to self-report bias, which may take the shape of social desirability bias (e.g. answering in a way that makes the participant appear in a more favourable light given the circumstances at play) or recall bias (misremembering or forgetting entirely). Related to recall bias, there are also issues relating to time periods, such that the time period that the linked administrative data and the self-report data refer to might be different. For instance, in this study, all linked administrative data is for the twelve months prior to the anniversary of the date each participant completed the Baseline survey. However, a participant can be surveyed within three months of their survey due date. Therefore, there can be up to three months 'gap' between the time periods that the self-report and the linked administrative data refer to, not to mention the difficulty for participants in recalling events in 12 month periods that overlap calendar years.

Finally, there are what we term definitional issues. For example, while participants are asked how many nights they spent in any hospital, the VAED is more precise in its definition of a hospital bed day, such that these include hospital in the home or same day separations, include only Victorian hospitals, and includes all types of hospital stays (public, private, rehabilitation centres, extended care facilities, and day procedure centres). As such, while differences in the trends between self-report and linked administrative data are discussed in this report, divergence is unsurprising given the abovementioned caveats.

4. A PROFILE OF STUDY PARTICIPANTS

Table 4 presents selected demographic characteristics of J2SI research study participants at each of the seven survey waves, by group. In terms of demographic characteristics, each group is largely comparable to one another as one would expect with randomisation. The J group (at each survey wave) is marginally older, includes more male respondents, and has a lower proportion of Indigenous Australians than the E group. While males represent an increasing, albeit fluctuating proportion of the J group over time relative to Baseline, the opposite is true of the E group, indicating that retention in the research study was higher among women accessing services as usual than men accessing services as usual.

The research study was better able to follow up with E group participants that were engaged with services because people's phone numbers and/or accommodation often change between waves, leaving services as one of the only avenues through which to locate people. Therefore, the higher proportion of females in the E group over time may reflect the higher propensity for females to access help than males - 60% of Specialist Homelessness Services clients in 2018/19 were female (AIHW, 2019). Lower rates of access to services among males may be attributable to stigma, discrimination, and negative past experiences accessing services (Anderson et al. 2006; Khandor et al. 2011). The I group varies more in composition across survey waves due to the small size of the group. The average age of both the J and E groups has increased over time, in line with the increasing age of the participants.

While the sample sizes for each survey wave vary quite substantially, the composition of the sample within groups across survey waves is comparable. The proportion of males in the J sample fluctuates between 68.8% (Baseline) and 76.2% (Wave 5); 75.7% of Js surveyed at Wave 7 were male. The proportion of J group participants that identified as Aboriginal or Torres Strait Islander ranged from 5.4% (Wave 7) to 9.5% (Wave 5). Among the E group, 64.9% were male at Baseline, and 58.5% were male at Wave 7. The lowest proportion of males in the E group was 57.4% in Wave 5.The proportion of E group respondents in each survey wave that identified as Aboriginal or Torres Strait Islander fluctuated between a low of 13.6% (Wave 2) and 18.5% (Wave 4).

In summary, the samples of J group and E group participants remain comparable to each other over time with respect to the age, sex, and Indigeneity of each group. Additionally, these characteristics remain stable over time within groups, such that J group participants are consistently, on average, slightly older, slightly more likely to be male, and less likely to identify as Aboriginal or Torres Strait Islander.

Table 4 Selected demographic characteristics of J2SI Phase 2 research study characteristics (%), by survey wave, by randomisation outcome

	Baseline	Wave 2	Wave 3	Wave 4	Wave 5	Wave 6	Wave 7
J GROUP							
N	64	52	60	47	42	37	37
Age (mean)	39.9	40.7	40.8	41.6	41.7	41.5	43.9
Male	68.8	71.2	70.0	74.5	76.2	70.3	75.7
Female	29.7	28.8	28.3	23.4	23.8	29.7	24.3
Other	1.6	0.0	1.7	2.1	0.0	0.0	0.0
	100.0	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Indigenous	9.4	7.7	8.3	8.5	9.5	8.1	5.4
Non-Indigenous	90.6	92.3	91.7	91.5	90.5	91.9	94.6
	100.0	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
E GROUP							
N	94	66	60	54	55	51	53
Age (mean)	38.6	38.5	39.4	39.9	40.9	41.2	41.5
Male	64.9	59.1	60.0	57.4	61.8	58.8	58.5
Female	34.0	40.9	40.0	40.7	36.4	41.2	39.6
Other	1.1	0.0	0.0	1.9	1.8	0.0	1.9
	100.0	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Indigenous	14.9	13.6	15.0	18.5	16.4	15.7	17.0
Non-Indigenous	85.1	86.4	85.0	81.5	83.6	84.3	83.0
	100.0	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
I GROUP							
N	21	5	15	8	6	5	11
Age (mean)	41.9	37.2	43.6	43.3	47.3	43.8	44.5
Male	81.0	80.0	86.7	75.0	66.7	60.0	72.7
Female	19.0	20.0	13.3	25.0	33.3	40.0	27.3
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	100.0	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Indigenous	4.8	0.0	6.7	12.5	16.7	20.0	9.1
Non-Indigenous	95.2	100.0	93.3	87.5	83.3	80.0	90.9
	100.0	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

5. HOUSING

The J2SI Phase 2 model of service delivery works in line with Housing First principles, which asserts that housing is a critical foundation from which homeless individuals, and particularly those experiencing chronic homelessness, can begin their recovery (Tsemberis, Gulcur, & Nakae, 2004). This is in contrast to traditional case management approaches that work towards readiness for housing. As such, the J2SI Phase 2 program focused on rapid housing from the outset using the strategic partnerships it had formed with Victorian public housing authorities and community housing providers. To assess housing outcomes from the J2SI Phase 2 program we use three data sources: the longitudinal survey conducted over a three year period, Victorian public housing administrative data, and Sacred Heart Mission's own housing records of its J2SI Phase 2 program participants.

We first report results from the longitudinal survey data. To ascertain the housing situation, participants are asked at each survey wave where they slept the night prior to their survey, and where they slept during the week prior to their survey. At Baseline, 89.2% of the matched J sample were homeless (e.g., rough sleeping, temporary accommodation, short-to-medium term supported accommodation, couch surfing) or in institutional accommodation (e.g., hospital, rehabilitation facility, prison). The remainder were housed, but at risk of homelessness and had recent histories of homelessness.

At Wave 7 of the survey and using the matched sample which only required that participants completed the Baseline and Wave 7 (and hence represents the largest sample of all the matched samples), the proportion of matched Js that were homeless or in institutional accommodation reduced to 37.8%. Stated in an alternative fashion, 62.2% of J group participants in the matched sample, compared with 26.6% of E and I group participants in the matched sample, were permanently housed at Wave 7. Examining just the E group, 71.7% were homeless at Wave 7, including 17.0% that were rough sleeping (compared with 2.7% of Js). Table 5 outlines the proportion of J, E, and E and I participants in the matched sample (those that completed Baseline and Wave 7) residing in each accommodation type in the week prior to survey at Baseline and Wave 7.

J2SI Phase 2 participants' positive feedback on being fast-tracked into permanent housing was a strong theme in the qualitative component of the study (Thielking et al., 2020). The following quote by a J participant (J10) reflects this sentiment:

"Well, accommodation. I have got steady accommodation. [J2SI case manager] got me a nice place and I like it. That's the biggest advantage I've had. I've been there nearly three years. If you know where you're gonna lay your head every night, where you're gonna get a feed from, it does take a lot of stress out of you. It takes a lot of stress out of your life."

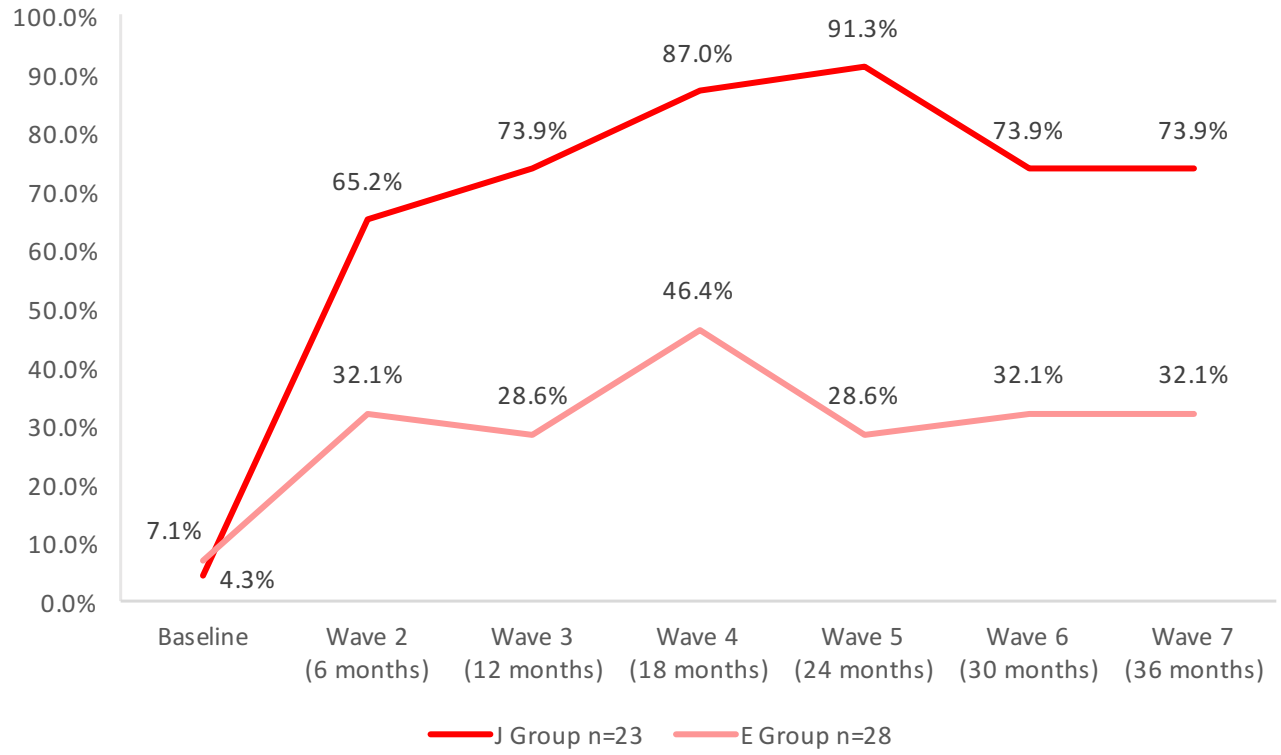
J2SI Phase 2 client

To understand more about the trajectory of housing outcomes over time, we examined results from the fully matched sample. This is a much smaller sample than the matched sample as it is built on participants completing all seven waves of the study. Housing being one of those domains that were covered in each wave of the longitudinal survey. Figure 3 illustrates the proportion of J group participants and E group participants in the fully matched sample that reported they were residing in permanent housing in the week prior to the relevant survey.

Table 5 Accommodation in which participants were residing the week before survey (%), by randomisation outcome, Baseline and Wave 7 (matched sample)

	Baseline Sample			Matched Sample					
				Baseline			Wave 7		
	J Group n=64	E Group n=94	E and I Group n=115	J Group n=37	E Group n=53	E and I Group n=64	J Group n = 37	E Group n=53	E and I Group n=64
Homelessness and Institutional Living	**92.3**	**91.5**	**92.1**	**89.2**	**90.6**	**90.6**	**37.8**	**71.7**	**73.4**
Slept rough	18.8	29.8	36.5	16.2	30.2	32.8	2.7	17.0	25.0
With friends/family because have nowhere else to live (e.g., couch surfing)	14.1	14.9	16.5	16.2	15.1	18.8	5.4	1.9	1.6
Short-to-medium term supported homelessness accommodation	42.2	29.8	25.2	29.7	28.3	25.0	18.9	17.0	14.1
Temporary accommodation (e.g., caravans, motels, boarding houses)	14.1	16.0	13.0	21.6	17.0	14.1	10.8	32.1	29.7
Institutional dwelling (e.g., hospitals, residential rehabilitation facility, jail)	3.1	1.1	0.9	5.4	0.0	0.0	0.0	3.8	3.1
Permanent Housing	**7.8**	**8.5**	**7.8**	**10.8**	**9.4**	**9.4**	**62.2**	**28.3**	**26.6**
Public/community housing	7.8	8.5	7.8	10.8	9.4	9.4	54.1	24.5	21.9
Private rental accommodation	0.0	0.0	0.0	0.0	0.0	0.0	8.1	3.8	4.7
TOTAL	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Figure 3 Proportion of participants that were in permanent housing for the week before the survey, by wave, by randomisation outcome (fully matched sample)



In the fully matched sample, the proportion of E group participants in permanent housing fluctuates between waves—starting at 7.1% at Baseline, increasing to 32.1% at Wave 2, decreasing to 28.6% at Wave 3, increasing to 46.4% at Wave 4, returning to 28.6% at Wave 5, then increasing to 32.1% for both Wave 6 and 7. Although the sample sizes of Js and Es in the fully matched sample are small, meaning that one or two people moving to or from permanent housing affects the figures materially, at Wave 7, 73.9% of Js compared with 32.1% of Es in the fully matched sample were stably housed. In the matched sample, 62.2% of Js versus 28.3% of Es were in permanent housing the week before their Wave 7 survey.

Our final analysis of the longitudinal survey uses the annual matched sample (those who completed each of the annual surveys). With respect to stability of tenure, 48.4% of Js in the annual matched sample were housed from Wave 3 through to Wave 7; an additional 16.1% attained housing between Wave 3 and Wave 5 (Year 1 and Year 2 of the program), resulting in the total of 64.5% of Js permanently housed at the conclusion of J2SI Phase 2. The 35.5% of Js that were not housed in Wave 7 were comprised of 12.9% of Js that were homeless throughout the duration of the study, 6.5% that lost their housing between Wave 3 and Wave 5, an additional 6.5% that achieved permanent housing at Wave 5 but lost it by Wave 7, with the remaining 9.7% housed at Wave 3 and Wave 5, but not housed at Wave 7.Figure 4 displays the housing trajectories of the J group for the annual matched sample.

Among Es, 16.2% were housed from Wave 3 through to Wave 7, 10.8% were housed from Wave 5 through to Wave 7, and 5.4% were housed for the first time in the study at Wave 7. With respect to the Es that were not housed at Wave 7, 8.1% were in permanent housing at baseline but never regained it during the study and 40.5% of Es were never in permanent housing during the research study, 16.2% were housed at Wave 3 but not at Wave 5 or 7, and 2.7% attained housing for the first time at Wave 5 but had lost it by Wave 7. Figure 5 depicts the housing inflows and outflows for both groups.

Figure 4 Housing trajectory of J2SI Phase 2 research study participants, by year (annual matched sample; n = 31)

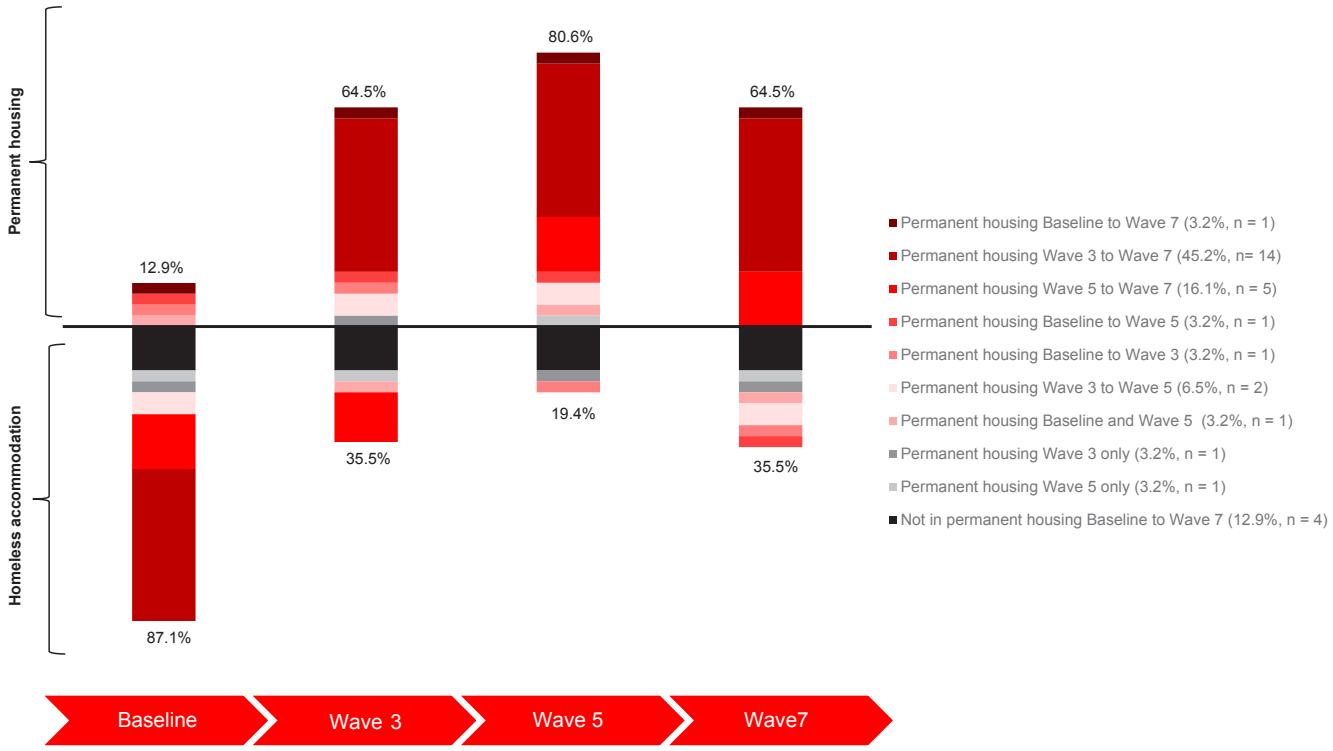
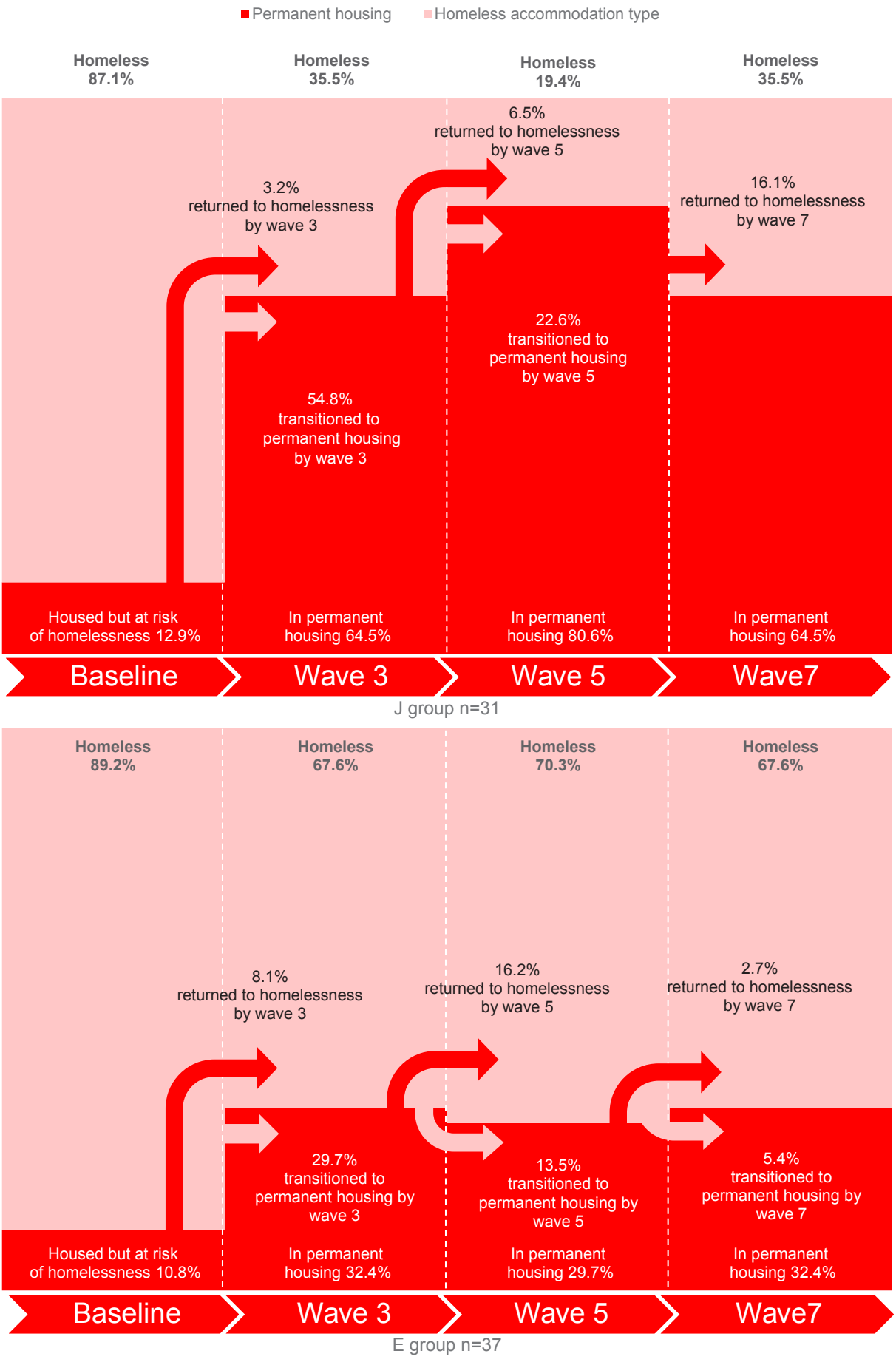


Figure 5 Inflows in and out of housing from homelessness to housing, J2SI Phase 2 research study participants (top panel) and control group (bottom panel), by year (annual matched sample)



In addition to our own longitudinal survey data, evidence on housing outcomes is also available from linked administrative data. Following appropriate ethical clearances, the Centre for Victorian Data Linkage (CVDL) also provided data pertaining to tenancies in public housing among J2SI Phase 2 research study participants during the first two years of the study. (We anticipate that data for subsequent years will be supplied in due course). As the CVDL data only relate to public housing tenancies, they are not directly comparable to the self-report data of the survey, which combines public and community housing categories. Furthermore, the CVDL data is tenancy-based data while the self–report data is occupancy based relating to where a person reports residing at a particular point in time. Differences in the self-report and administrative data may also reflect sampling bias, such that the research study may have been more able to contact and survey those Js that have secured permanent, public and community housing, while the linked administrative data represents the full sample, including those that are disengaged from community services and the research study.

Figure 6 depicts the proportion of both Js and Es that were recorded as holding a public housing tenancy at six-monthly intervals for the first two years of the research study in the Victorian public administrative data. Note that the samples exclude those Js and Es that passed away during the first two years of the program (n=10). In line with the J2SI Phase 2 program's focus on rapid housing, the proportion of Js that were in public housing according to the linked administrative data climbed sharply in the first 12 months of the program, from 3.4% at Baseline, to 11.9% at six months, to 32.2% at 12 months. The proportion of Js in public housing at 18 months was also 32.2%, climbing slightly to 35.6% at the two-year mark. A lower proportion of Es were in public housing tenancies for the first two years of the J2SI Phase 2 research study, from 4.5% at Baseline, to 9.1% at six months, 13.6% at both 12 and 18 months, and 14.8% at two years.

Our final piece of analysis of housing outcomes is drawn from SHM's own records of the housing tenure position of J2SI Phase 2 clients. Figure 7 provides a profile of housing tenure outcomes of J2SI Phase 2 clients over time for 64 clients including five that disengaged from the program early and seven that were identified as having died. The housing records of Sacred Heart Mission for the J2SI Phase 2 program participants reveal that 87.5% of participants in the program were supported by SHM to move into permanent housing of one kind or another (public housing, community housing, private rental housing) during the course of the study. At the end of the program, 82.5% of those J participants who had not died during the course of the study, were in permanent housing. If we exclude those who disengaged from the program earlier in its term then 90.4% of this smaller J group were assessed as being permanently housed by the SHM team at the end of the program. The profile suggests a higher rate of permanent housing than in our previous analyses. The profile also suggests relatively high levels of community housing placement. Public housing, as shown in Figure 6 on a standalone basis, is approximately half of the permanent housing in Figure 7.

In the qualitative interviews, participants spoke about housing as being more than just a 'roof over one's head' (Thielking et al., 2020). A need for safety in accommodation was mentioned frequently by participants when describing their housing needs. In addition, a range of housing features were desired, that together culminated into what can only be described as a home. The impact of sub-standard housing on participants' overall wellbeing and quality of life was shared by all. The following statements of participants in the study drawn from the companion qualitative report (Thielking et al. 2020) illustrate the range of housing needs that chronically homeless people express as important to them.

I need privacy.
I need housing that is safe.
I need housing that is physically accessible.
I need enough space for my children/partner/pets.
I need to be able to exercise choice about with whom I live.
I need housing that is adequately furnished and fitted with working amenities.
I need housing in my community and close to my services.
I need housing that enables me to join a safer community.
I need housing that doesn't expose me to a drug culture.
I need housing that is accessible via public transport.
I need housing that is permanent and place to call my own.

J2SI Phase 2 clients

Figure 6 **Proportion of J2SI Phase 2 research study participants in public housing in the first two years of participation in the study, by randomisation outcome, by six month intervals (linked administrative data)**

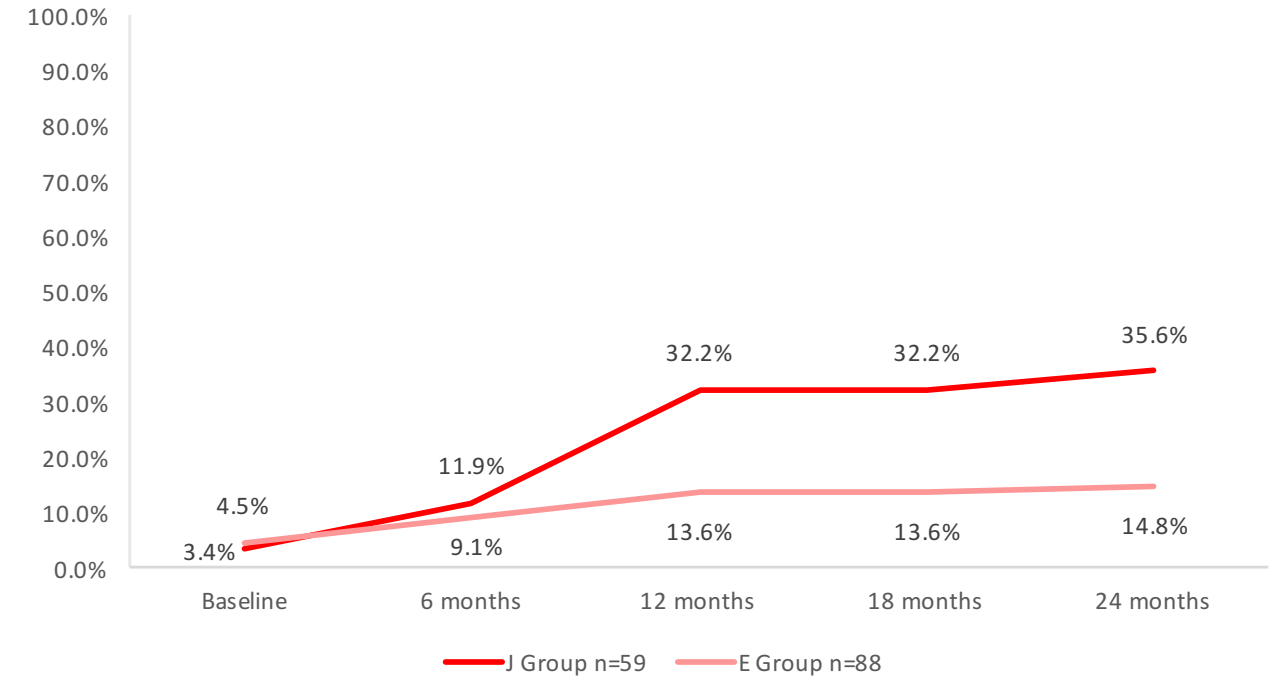
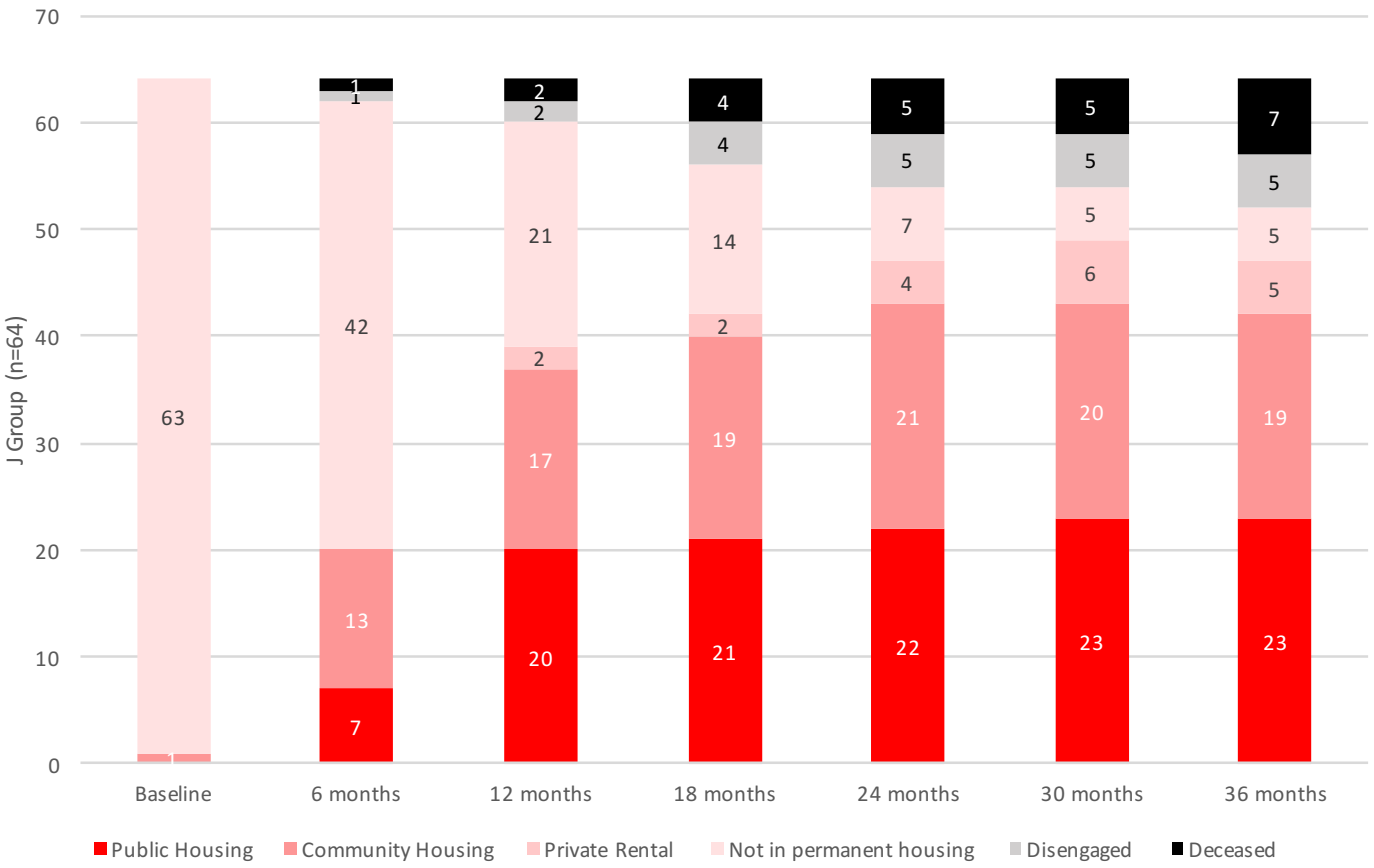


Figure 7 **J2SI Phase 2 participants (Js) Sacred Heart Mission administrative housing data, distribution of housing outcomes from the three years of participation in the program by six month intervals**



In addition to housing tenure outcomes, participants in the study were asked to rate the extent to which they had felt safe in their accommodation over the past month, from none of the time, a little of the time, some of the time, most of the time, and all of the time in the quantitative component of the study (see Table 6). Interestingly, despite the much higher rates of permanent housing among the Js, a slightly higher proportion of Es than Js in the matched sample reported feeling safe 'all' or 'most' of the time at both Baseline (48.6% of Js and 49.0% of Es) and Wave 7 (70.3% of Js and 73.6% of Es). While the discrepancy between the groups is quite small, and there is a marked increase in feelings of safety between Baseline and Wave 7, there are some potential explanations.

It may be that Js are adjusting to or, indeed, dissatisfied with their housing. Previous studies have found that, although there are strong fears for safety among those living on the street, there are often (albeit precarious and transient) social connections among those experiencing homelessness that offer (temporary) feelings of protection and access to resources (Bower, Conroy & Perz, 2018). In addition, street life among the chronically homeless is the 'norm', and deviating from that norm can leave people feeling both physically and psychologically unsafe, at least initially (Paterson et al. 2014). The qualitative component of the J2SI study also revealed that, although there was general satisfaction with and excitement about having housing, it was not without concerns, particularly around neighbours and visitors, and safety (Thielking et al. 2020).

Table 6 Perception of accommodation safety (%), by randomisation outcome, matched sample

	Baseline Sample			Matched Sample					
				Baseline			Wave 7		
How much of the time have you felt safe, in your accommodation for the past month?	J Group n=64	E Group n=94	E and I Group n=115	J Group n=37	E Group n=53	E and I Group n=64	J Group n = 37	E Group n=53	E and I Group n=64
None of the time	15.6	20.2	19.1	13.5	20.8	21.9	13.5	5.7	7.8
A little of the time	9.4	16.0	17.4	10.8	18.9	18.8	8.1	5.7	4.7
Some of the time	21.9	18.1	19.1	27.0	11.3	10.9	8.1	15.1	17.2
Most of the time	35.9	22.3	22.6	35.1	24.5	25.0	29.7	30.2	26.6
All of the time	17.2	23.4	21.7	13.5	24.5	23.4	40.5	43.4	43.8
	100.0	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Figure 8 Mean satisfaction with outcomes achieved in housing and housing support from J2SI, by wave, by randomisation outcome (fully matched sample)

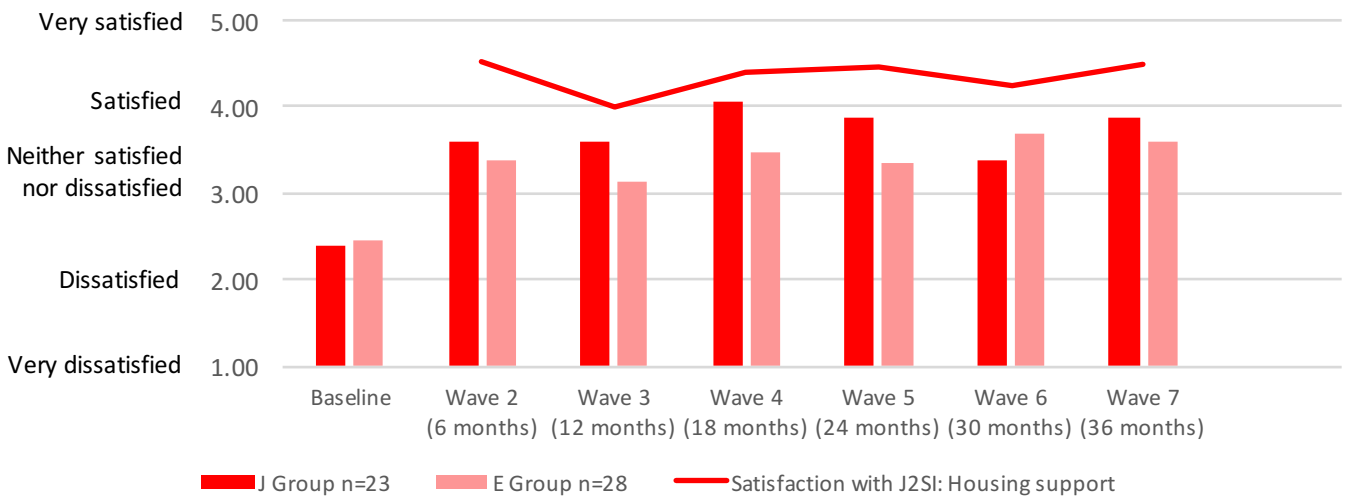


Figure 8 depicts the ratings of satisfaction with housing among Js and Es in the fully matched sample (1 = very dissatisfied, 5 = very satisfied). In terms of self-rated housing satisfaction, both Js and Es moved from generally dissatisfied (mean satisfaction of 2.4 and 2.5 out of 5, respectively) at Baseline to generally satisfied (3.9 and 3.6 out of 5) at Wave 7. Housing satisfaction peaked at Wave 4, 18 months into the program, for Js (mean score 4.0), and at Wave 6 for Es and Is (mean score 3.7).

Satisfaction with the support received for housing from the J2SI program was generally high among Js, peaking at Wave 2 (six months into the program) in line with the program's focus on housing in the fully matched sample. There was a slight decline in satisfaction with J2SI housing support at Wave 3 (from 4.5 to 4.0 among Js in the fully matched sample), which may reflect the perspective of those participants that were unable to get housing in the first year. However, satisfaction with housing support stabilises to close to its peak by the end of the program.

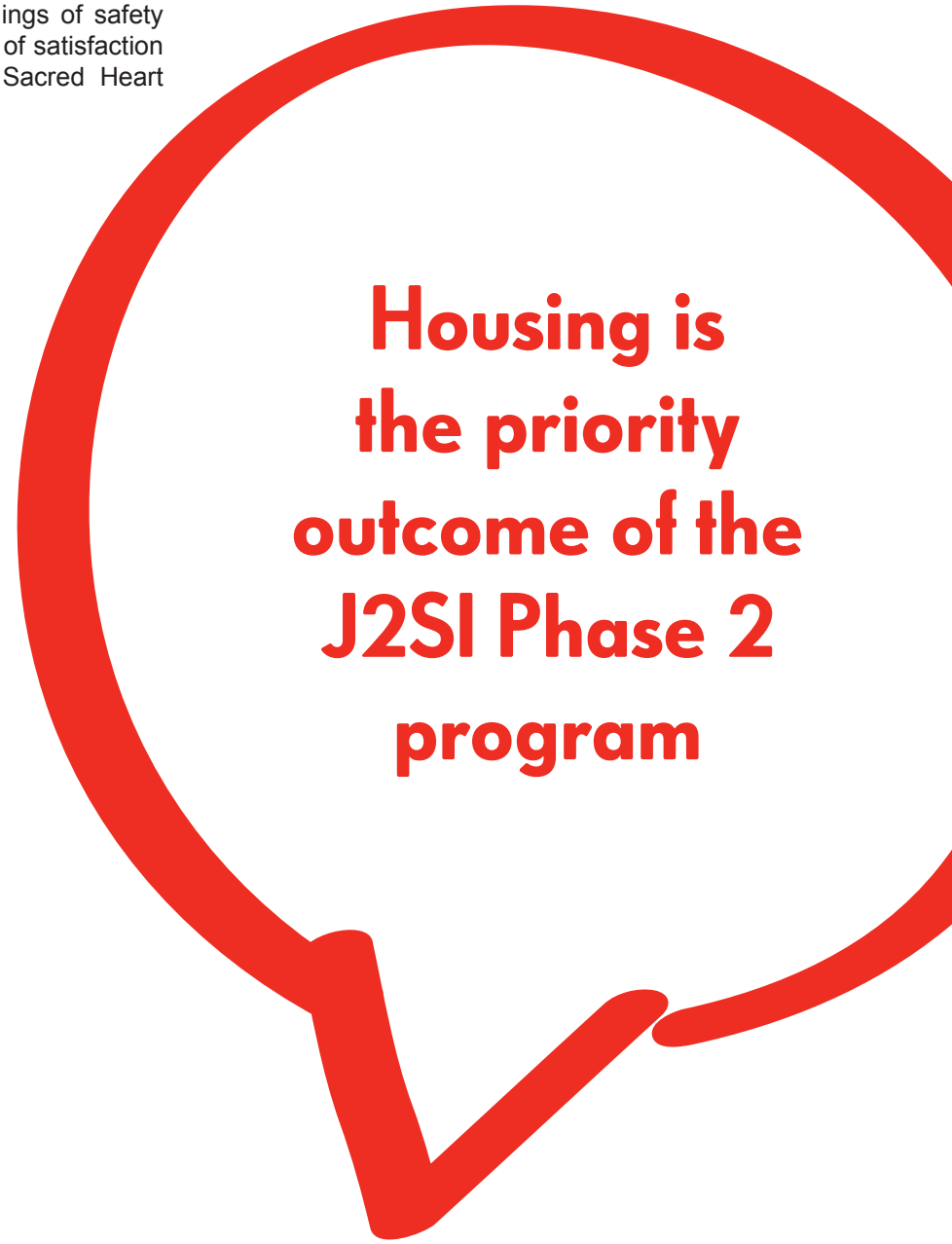
This strong satisfaction with holistic housing support that J2SI provides participants is reflected in the following participant (J7) statement derived from the qualitative component (Thielking et al., 2020):

"If they are homeless and needed help, to get in contact with them (J2SI), because they're really good. They'll be able to help you, so it'd be right, from housing to medical, to just getting you help for you to get to appointments… so there is always a duty worker to talk to. If they can get accommodation for you, they will work with you to find something. But just be honest and open, you will get the services."

J2SI Phase 2 client

Summary

Housing is the priority outcome of the J2SI Phase 2 program. At Baseline in 2016, all participants in the research study were homeless or at risk of losing their housing after periods of homelessness. However, the J2SI Phase 2 survey evidence together with the public housing administrative data and the SHM J2SI Phase 2 program client data point to the fact that the J2SI Phase 2 program was successful in transitioning the majority of their clients into permanent housing and sustaining that housing. During the period of the study the Victorian Government implemented significant programs of support for rough sleepers including extra housing options (see section 2 above). The increase in homelessness support may have impacted the rate of transitions to permanent housing for the E group, which may not have occurred if the level of support available in 2016 had remained stable throughout the study period. However, it is clear that the extensive program of housing provider partnerships implemented by Sacred Heart Mission acted to bring out a very large transition to permanent housing which was both rapid and sustained. Moreover, feelings of safety improved and there was a very high level of satisfaction with the housing services provided by Sacred Heart Mission from J2SI clients.



6. HEALTH

There is a very large body of evidence pointing to a higher prevalence of chronic physical health conditions, mental health conditions, and alcohol and other drug use and dependence, among the homeless population than the general population, particularly among people who are chronically homeless (Frankish, Hwang, & Quantz, 2005; Schanzer et al. 2007). These conditions present as both antecedents to and consequences of homelessness. For example, the inability to work due to chronic illness may create economic circumstances that mean an individual cannot sustain their living arrangements and becomes homeless (Rochefort, 1997). Then, while homeless, exposure to the elements may exacerbate or create illness, which is then compounded by the reality that homeless individuals are more likely to face barriers which inhibit their ability to access healthcare services to address their health needs (Hwang, 2001).

J2SI Phase 2 study participants were asked about a number of aspects of their physical and mental health and were administered validated instruments for assessing their mental health and use of alcohol and other drugs.

Physical health: Self-report general health, chronic diseases, and access to treatment and services.

Mental health: Kessler Psychological Distress Scale (K10; Kessler, et al., 2002); Depression, Anxiety, Stress Scales, Second Edition, Short Form (DASS21; Lovibond & Lovibond, 1996); Short Warwick-Edinburgh Mental Wellbeing Scale (S-WEMWBS; Tennant, et al., 2007); Single-Item Self-Esteem Scale (SISES; Robins, Hendin & Trzesniewski, 2001); self-report diagnosed mental health conditions; engagement with mental health professionals and treatment; and hospitalisation.

Alcohol and other drug use: Alcohol, Smoking and Substance Involvement Screening Test (ASSIST; WHO ASSIST Working Group, 2002).

Our baseline report (Miscenko et al. 2017) provides evidence of the extent to which J2SI Phase 2 research study participants experienced elevated levels of health conditions (e.g., high blood pressure, cardiovascular disease, asthma, cancer, diabetes, schizophrenia, or bipolar disorders) relative to the general population. Most J2SI Phase 2 respondents (91.1%) reported having at least one long-term health condition and/or diagnosed mental health condition at baseline such as depressive disorders (60.3%), substance-related abuse (56.4%), anxiety disorders (43.6%), hepatitis C (36.9%), chronic back or neck problems (38.0%), and post-traumatic stress (35.2%). Co-morbidity is commonplace among participants. Indeed, more than three-quarters (74.3%) of respondents reported three or more chronic physical or mental health conditions at baseline.

Given the very high prevalence of long-term health conditions and diagnosed mental health conditions at baseline we focused on changes in self-reported physical and mental health. The results need, of course, to be read against the very high rates of long-term physical and mental health conditions and co-morbidity on entry to the study.

Physical Health

Long-term physical health conditions are a risk factor of homelessness while at the same time homelessness has significant negative impacts on physical health outcomes which are then compounded, often becoming long-term health problems, due to the barriers experienced by homeless individuals in accessing healthcare and adhering to treatment plans (Hwang, 2001).

Given the very high prevalence of long-term health conditions on entry to the study we used changes in self-assessed health as a means of assessing changes in health status over time. Self-assessed health status is commonly used as a measure of self-assessed physical health status across national data collections and international studies (AIHW, 2016; Hernandez-Quevedo, Jones & Rice, 2004). In rating their health status, participants are asked to identify their health as poor, fair, good, very good, or excellent. Self-assessed health status may provide a good indicator of the extent to which participants perceive a change in their health position in spite of the long-term health conditions that many participants in the study experience.

As with the analysis of housing outcomes, we begin with matched sample findings. In the matched sample, where we compare outcomes at Wave 7 with Baseline, the proportion of the E group in each category of self-assessed health status remained very similar between Baseline and Wave 7 (Table 7). Among the J group, there is a general trend between Baseline and Wave 7 towards poorer self-assessed health. For example, the proportion that rated their health as ‘excellent’ stayed the same and the proportion that rated their health as ‘very good’ decreased between Baseline and Wave 7, from 29.7% to 10.8%. At the same time, there was an increase in the proportion of J’s that reported poor self-assessed health.

The most obvious explanation of the somewhat different outcomes for the J group and E group in terms of self-assessed health is that some members of J group had long-term health conditions which simply worsened over the period under review perhaps reflecting the nature of the conditions held by those members on entry. One possible alternative hypothesis, is that settling into permanent housing removes a number of destabilising factors in people’s lives, and provides a greater platform for health checks and addressing health problems. This may bring the seriousness of underlying long-term and chronic health conditions to the fore, ultimately leading some to rate their health as poorer over time.

Evidence from the qualitative interviews with 18 J and E participants reflect this notion of a hierarchy of needs, being addressed in a step-by-step hierarchical fashion. The first step, achieving survival by way of food, emergency accommodation or rapid connection to specialist services, is followed by obtaining safe, secure and appropriate housing (that is permanent, safe, close to services, meets the individual needs of the client, and near public transport), which precedes higher order priorities of attempting to resolve physical health, mental health, social inclusion and/or relational issues; before building employability skills, seeking employment, volunteering and/or achieving other personal independence goals.

As stated in the qualitative report, "Most J participants affirmed that the J2SI program was particularly helpful in supporting them to address the first two priority areas, however, gains in other priorities were less substantive. The reason for this may be that the 36-month time point, which also represented the time when the J2SI Phase 2 program ended, was too early in the trajectory of reaching higher order priorities leading to significantly improved wellbeing and personal independence" (Thielking et al. 2020 p. 22).

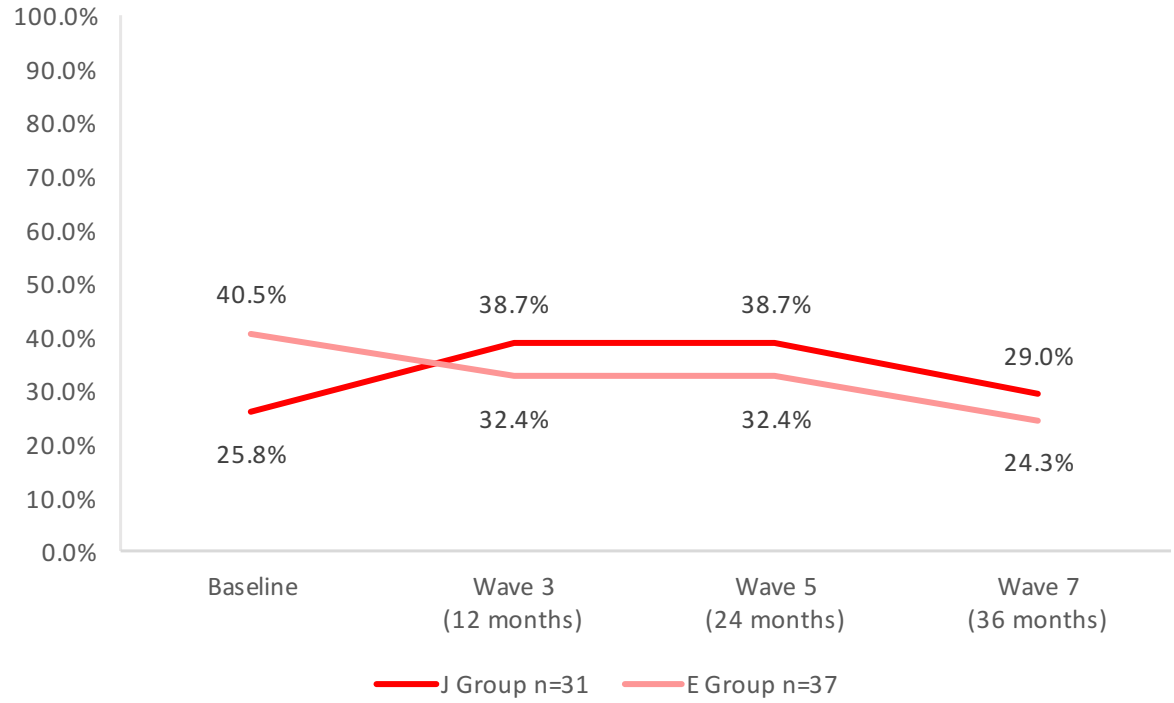
Rather than simply compare Wave 7 results with the Baseline using the matched sample (those that completed both the Baseline and Wave 7), it is useful to analyse self-assessed outcomes each year using the annual matched sample. In each annual survey wave, participants are asked to rate their health relative to the year prior. For the annual-matched J group sample, 25.8% rated their health as somewhat better or much better than a year prior at Baseline. As can be seen in Figure 9, this proportion peaked at 38.7% in both Wave 3 and Wave 5, then decreased to 29.0% of J group participants at Wave 7 that rated their health as somewhat better or much better than the year prior. The proportion of the annual-matched E group that rated their health as somewhat better or much better than the year prior decreased from 40.5% at Baseline, to 32.4% in both Wave 3 and Wave 5, to 24.3% in Wave 7.

The estimates based on the annual matched sample present a somewhat different pattern to the matched sample analysis. Here, Es experience an ongoing deterioration in self-assessed health status throughout while J's initially improve in terms of self-assessed health but then experience a fall in self-assessed health. This may have happened because health needs were being addressed in the early to middle periods of engagement in the J2SI Phase 2 program, but from that point less focus was placed on addressing health needs or alternatively the underlying problems associated with their long-term conditions came to the fore again. This result is in line with the increase in self-ratings of health as "poor" in wave 7 in the matched sample.

Table 7 Proportion of participants in each category of self-assessed health status (%), by randomisation outcome, Baseline and Wave 7 (matched sample)

	Baseline Sample			Matched Sample					
				Baseline			Wave 7		
In general, would you say your health is…	J Group n=64	E Group n=94	E and I Group n=115	J Group n=37	E Group n=53	E and I Group n=64	J Group n = 37	E Group n=53	E and I Group n=64
Poor	21.9	20.2	19.1	5.4	20.8	20.3	13.5	18.9	18.8
Fair	32.8	29.8	27.8	35.1	37.7	32.8	35.1	32.1	32.8
Good	23.4	34.0	35.7	27.0	28.3	29.7	37.8	32.1	32.8
Very Good	17.2	9.6	11.3	29.7	7.5	10.9	10.8	13.2	10.9
Excellent	4.7	6.4	6.1	2.7	5.7	6.3	2.7	3.8	4.7
	100.0	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Figure 9 Proportion of participants that report their health is somewhat or much better than one year ago, by wave, by randomisation outcome (annual matched sample)



We now turn to another measure of self-assessed health, satisfaction with health, as well as another of our samples, namely, the fully matched sample in which we examine outcomes in each wave of data collection (our smallest matched sample). Satisfaction with health among both Js and Es in the fully matched sample remains both stable and low. Mean satisfaction with health at Baseline was 3.1 (out of 5) for Js and 3.0 for Es, climbing slightly to 3.2 and 3.1, respectively, in Wave 7. Satisfaction with the support received from the J2SI program for health among Js in the matched sample stayed generally stable between Wave 2 and Wave 7 at around 4.0/5.

Figure 10 Mean satisfaction with outcomes achieved in health and health support from J2SI, by wave, by randomisation outcome (fully matched sample)

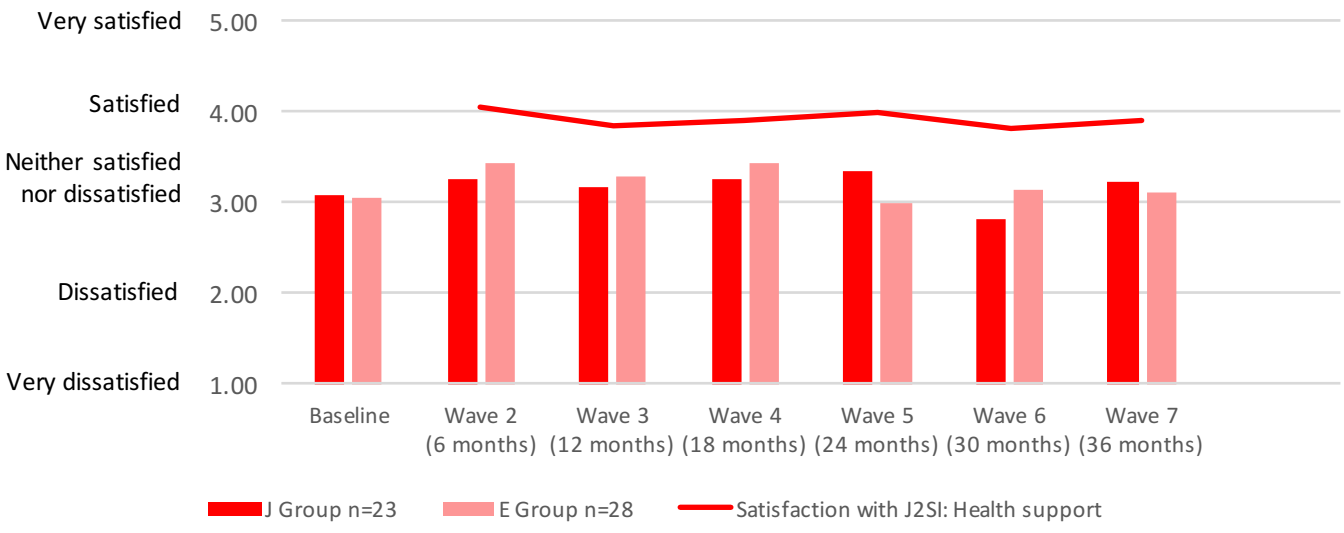


Figure 10 depicts the satisfaction with outcomes achieved in health among Js and Es in the fully matched sample. Those who are chronically homeless also exhibit higher mortality rates. This was brought home in the study. Sadly, mortality among participants in the study was particularly high with 13 of the original 179 participants known to have died (equally across both the J group and E and I groups) by the end of wave 7. We do not yet have cause of death data but the elevated rates of long-term health conditions, diagnosed mental health conditions and substance use issues on entry into the program may have contributed to this very high death rate.

Mental Health

Those experiencing chronic homelessness exhibit elevated rates of mental health disorders (Fazel, Khosla, Doll, & Geddes, 2008; Nielssen et al., 2018). And while mental health conditions are a risk factor for homelessness, homelessness itself is a major contributor to psychological distress and poor mental health outcomes (Goodman, Saxe & Harvey, 1991). At Baseline, the prevalence of diagnosed mental health conditions was extremely high; 60.3% reported diagnosed depressive disorders, 56.4% reported substance-related abuse, 43.6% reported diagnosed anxiety disorders and 35.2% post-traumatic stress disorder.

To examine change in mental health outcomes given this high prevalence of diagnosed mental health conditions at Baseline we examined changes in mental well-being using common validated and robust measures. The J2SI Phase 2 longitudinal surveys include a number of measures of mental wellbeing, including the Kessler Psychological Distress Scale (K10) and Depression, Anxiety and Stress Scale (DASS21).The K10 measures psychological distress experienced in the previous four weeks (Kessler, et al., 2002), while the DASS21 indicates the degree of severity of depression, anxiety, and tension/ stress over the previous week (Lovibond & Lovibond, 1996).

Levels of psychological distress and mental health disorders are markedly higher among the homeless, and particularly chronically homeless populations, relative to the general population (Fazel et al. 2008). While 13.0% of Australians report high or very high levels of psychological distress measured on the Kessler Psychological Distress Scale (K10) (ABS, 2018); at Baseline, 75.7% of J group participants and 67.6% of E and I group participants in the matched sample reported high or very high levels of psychological distress on the K10. At Wave 7 (or Year 3), these proportions reduced slightly to 67.6% of Js and 59.4% of Es and Is in the matched sample reporting high or very high levels of psychological distress. Examining the E group alone, 66.0% were experiencing high or very high levels of psychological distress at Baseline compared with 56.6% at Wave 7.

Notably, most of this reduction in high and very high levels of distress is accounted for by transitions to the low psychological distress category: 2.7% of Js in the matched sample were experiencing low psychological distress at Baseline, compared with 13.5% at Wave 7; 7.8% of E and I group participants were experiencing low psychological distress at Baseline, compared with 21.9% at Wave 7. Similarly, among the E group, 7.5% were experiencing low psychological distress at Baseline while 22.6% were experiencing low psychological distress at Wave 7. Table 8 outlines the proportion of Js, Es, and Es and Is in the matched sample whose K10 scores fell into each category of distress (low – very high) at Baseline and Wave 7.

Table 8 Proportion of participants in each category of psychological distress on the Kessler Psychological Distress Scale (K10; %), by randomisation outcome, Baseline and Wave 7 (matched sample)

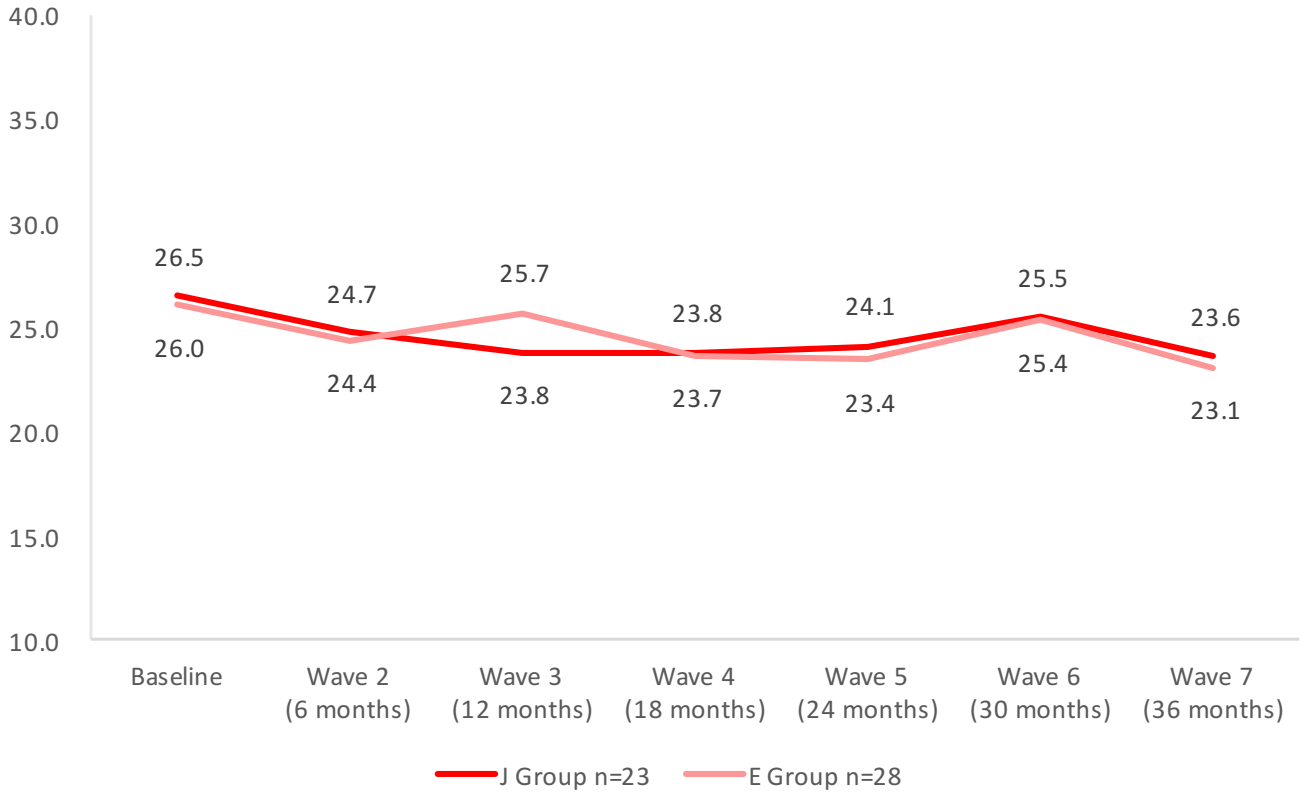
	Baseline Sample			Matched Sample					
				Baseline			Wave 7		
	J Group n=64	E Group n=94	E and I Group n=115	J Group n=37	E Group n=53	E and I Group n=64	J Group n = 37	E Group n=53	E and I Group n=64
Low	3.1	8.5	9.6	2.7	7.5	7.8	13.5	22.6	21.9
Moderate	17.2	20.2	18.3	21.6	26.4	25.0	18.9	20.8	18.8
High	31.3	23.4	20.9	32.4	26.4	23.4	29.7	32.1	29.7
Very High	48.4	47.9	51.3	43.2	39.6	43.8	37.8	24.5	29.7
	100.0	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

With respect to mean scores on the K10, both Js, and Es and Is in the matched sample experienced a reduction in mean score from 28.2 and 28.1, respectively, at Baseline, to 24.9 for both groups at Wave 7. Examining Es alone, mean K10 scores reduce from 27.6 at Baseline to 24.1 at Wave 7. The trajectory in mean K10 scores can be mapped out using the fully matched sample (those that completed all seven surveys) as the K10 was applied in all seven waves of data collection. Figure 11 depicts the mean K10 scores over the seven survey waves among Js and Es in the fully matched sample. Findings based on the fully matched sample are subject to the caveat of a smaller sample size relative to the matched sample, but the overall trend decline in psychological distress scores is evident.

The reduction in psychological distress in both groups over time is a pleasing outcome. There are a number of possible drivers of this reduction. While the J2SI Phase 2 program embedded psychological and social support and trauma-informed care in its practices, the Victorian Government invested heavily in support services for those experiencing homelessness particularly those sleeping rough during the period of the J2SI Phase 2 program (see Section 2 above for more details). Our findings in relation to the E group in the study may reflect, in part, the impact of these initiatives in inner city Melbourne.

No doubt the improved outcomes in terms of psychological distress reflect in part the transition to permanent housing among both Es and Js. The substantial number of both groups being housed at Wave 7 relative to Baseline reduces psychological distress relating to a lack of housing. Housing has the effect of reducing psychological distress (Tsemberis, Kent & Respress, 2012; Wong & Piliavin, 2001), but may not necessarily be correlated with reduced psychological distress due to other factors (Tsemberis et al. 2004; Greenwood et al. 2005). This is particularly true of those homeless individuals who are contending with serious mental health conditions, as is characteristic of the chronically homeless, for whom psychological distress is particularly prevalent and persistent (Wong, 2002). Housing is critical to stemming the inevitable increase in psychological distress associated with time spent homeless. Psychological distress results from an individual encountering life stressors (e.g., relationship breakdown, job loss, crime victimisation) that exceed the resources they have at the time to deal with the stressors (Wong & Piliavin, 2001). While the nature of life stressors encountered by housed and homeless people may differ, and housing may indeed be a resource that helps to deal with certain stressors, housing does not stop life stressors from occurring, nor does it represent a solution for dealing with all types of stressors (Wong & Piliavin, 2001).

Figure 11 Mean score of Psychological distress (out of 40) on the Kessler Psychological Distress Scale (K10), by wave, by randomisation outcome (fully matched sample)



To further explore the issue of the impact of the J2SI Phase 2 program on mental health problems we examine impacts on depression, anxiety and stress. Levels of depression, anxiety and stress experienced by participants in the J2SI Phase 2 research study were measured using the DASS21. The DASS21 allows for the measurement of separate scores for depression, anxiety and stress.

With respect to depression, among the fully matched J group, though still higher than the Australian average of 2.6 (Crawford et al. 2011) there is a general downtrend from a mean score of 8.3 at Baseline, to 5.7 at Wave 7. There are fluctuations in mean depression scores throughout the program for fully matched Js, with scores reaching their lowest at Wave 2 (six months into the program) at 5.6, rising to 6.1 at Wave 3 (Year 1), reducing again to 5.7 18 months into the program, increasing to 6.0 and 6.7 at the 2- and 2.5-year points of the program, respectively, before decreasing to 5.7 at Wave 7, the end of the program. Trends in depression scores follow a similar pattern for fully matched Es, decreasing from a peak of 7.5 at Baseline to 6.3 at Wave 7, with the lowest mean score of 6.1 recorded at Wave 4. See Figure 12 for a visual depiction of trends in depression scores between Baseline and Wave 7 for Js and Es in the fully matched sample.

Figure 12 Mean depression scores on the DASS21, Baseline – Wave 7, by randomisation outcome (fully matched sample)

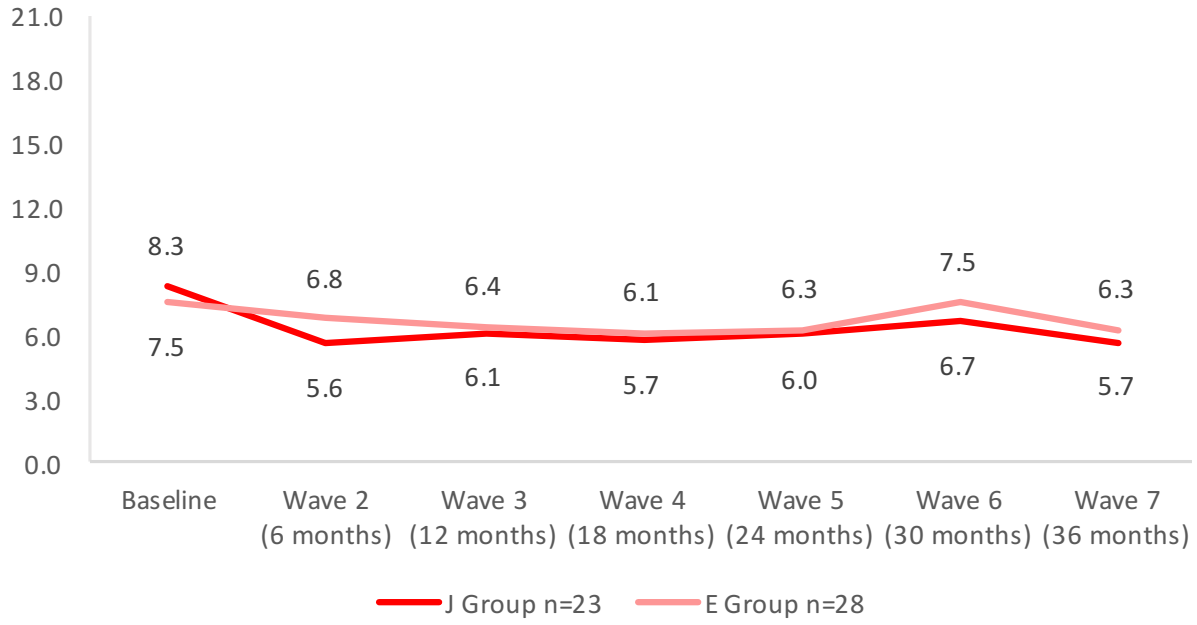


Table 9 Proportion of J2SI research study participants in each category of depression on the DASS21 (%), Baseline – Wave 7, by randomisation outcome (fully matched sample)

		Baseline	Wave 2 6 months	Wave 3 12 months	Wave 4 18 months	Wave 5 24 months	Wave 6 30 months	Wave 7 36 months
J Group n=23	Normal	26.1	43.5	43.5	43.5	43.5	34.8	47.8
	Mild	17.4	8.7	4.3	17.4	8.7	17.4	13.0
	Moderate	30.4	34.8	30.4	26.1	26.1	26.1	17.4
	Severe	8.7	8.7	17.4	4.3	13.0	4.3	13.0
	Extremely Severe	17.4	4.3	4.3	8.7	8.7	17.4	8.7
		100.0	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
E Group n=28	Normal	35.7	35.7	39.3	39.3	42.9	32.1	35.7
	Mild	14.3	17.9	14.3	10.7	17.9	14.3	14.3
	Moderate	25.0	25.0	28.6	35.7	21.4	25.0	32.1
	Severe	7.1	10.7	10.7	10.7	7.1	10.7	7.1
	Extremely Severe	17.9	10.7	7.1	3.6	10.7	17.9	10.7
		100.0	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

With respect to the various DASS21 categories of depression (normal, mild, moderate, severe, or extremely severe), the proportion of Js in the fully matched sample in the 'normal' category increased from 26.1% at Baseline to 47.8% at Wave 7. The proportion of Es in the fully matched sample in the 'normal' category of depression scores was the same at Baseline and Wave 7, at 35.7% (Table 9). Overall, with respect to depression, both groups reported lower scores at Wave 7 than at Baseline. In terms of differences between groups, Js in the fully matched sample started the J2SI Phase 2 program with depression scores slightly higher than Es and ended with slightly lower scores than Es.

We now turn to the DASS21 anxiety scores and again focus on the trajectory of scores over time using the fully matched sample. Figure 13 outlines the mean anxiety scores on the DASS21 between Baseline and Wave 7 for Js and Es in the fully matched sample. In terms of anxiety, relative to the Australian mean of 1.7 (Crawford et al. 2011), Js in the fully matched sample began the J2SI Phase 2 program with a mean anxiety score of 6.2. This score decreased to 4.4 in Wave 2, increased slightly to 4.6 and 4.7 in Waves 3 and 4, respectively. The scores then increased sharply to 6.0 at Wave 6 (2.5 years into the program), before reducing again to 4.6 at Wave 7. The trend is similar among Es in the fully matched sample: anxiety scores were 5.6 on average at Baseline, and 4.0 at Wave 7. Between these two time points, scores decreased up until Wave 4 (4.9 in Waves 2 and 3, 4.6 in Wave 4), increased slightly to 4.7 at Wave 5, increased sharply to 5.9 at Wave 6, before reducing sharply to 4.0 at Wave 7. Overall, Js in the fully matched sample started and finished the J2SI program with slightly higher anxiety scores than Es, though scores for both groups were lower at Wave 7 relative to Baseline.

Figure 13 Mean anxiety scores on the DASS21, Baseline - Wave 7, by randomisation outcome (fully matched sample)

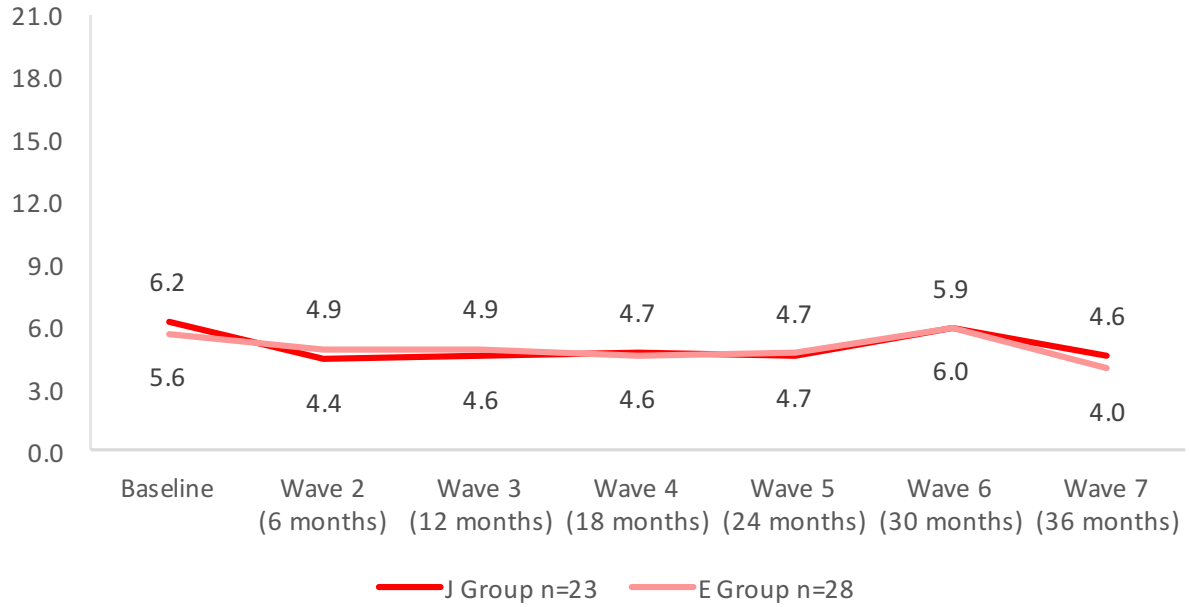


Table 10 Proportion of J2SI research study participants in each category of anxiety on the DASS21 (%), Baseline - Wave 7, by randomisation outcome (fully matched sample)

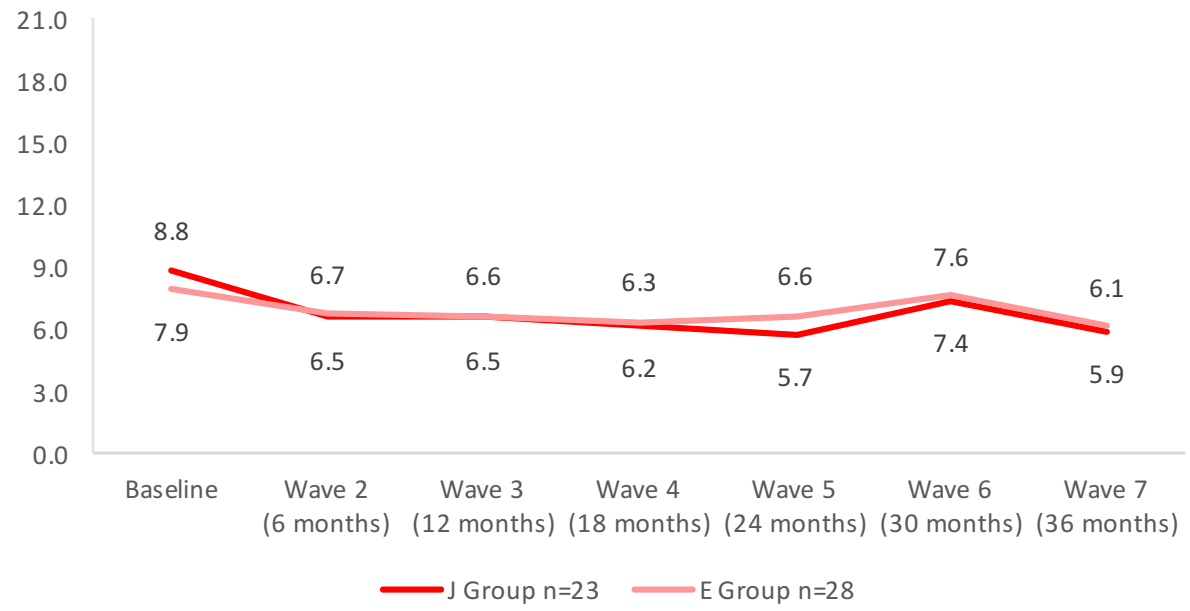
		Baseline	Wave 2 6 months	Wave 3 12 months	Wave 4 18 months	Wave 5 24 months	Wave 6 30 months	Wave 7 36 months
J Group n=23	Normal	39.1	47.8	56.5	47.8	47.8	39.1	47.8
	Mild	13.0	17.4	0.0	8.7	17.4	17.4	13.0
	Moderate	17.4	8.7	13.0	26.1	13.0	4.3	13.0
	Severe	8.7	17.4	13.0	4.3	8.7	13.0	17.4
	Extremely Severe	21.7	8.7	17.4	13.0	13.0	26.1	8.7
		100.0	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
E Group n=28	Normal	35.7	42.9	39.3	42.9	53.6	39.3	57.1
	Mild	25.0	25.0	14.3	14.3	10.7	14.3	10.7
	Moderate	10.7	7.1	14.3	21.4	14.3	21.4	7.1
	Severe	7.1	10.7	21.4	7.1	3.6	0.0	17.9
	Extremely Severe	21.4	14.3	10.7	14.3	17.9	25.0	7.1
		100.0	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

With respect to the various DASS21 categories of anxiety (normal, mild, moderate, severe, or extremely severe), Table 10 shows that a higher proportion of both Js and Es in the fully matched sample were in the 'normal' category of anxiety while a lower proportion were in the 'extremely severe' category. These shifts appear to be attributable to those in the 'extremely severe' category reducing to 'severe' and those in the 'mild' category shifting to 'normal' levels of anxiety. There are no clear trends across survey waves, with the proportion of both Js and Es in the fully matched sample in each category of anxiety fluctuating between waves. Notably, among both groups, the proportion experiencing 'extremely severe' anxiety increased dramatically at Wave 6, to above Baseline levels, before reducing down to its lowest point at Wave 7.

In the absence of clear trends, it is difficult to hypothesise the factors underlying the fluctuations in anxiety among the fully matched sample. Recall that the fully matched sample is the smallest of the samples we use from the study and so is subject to variation from a small numbers problem. Beyond that, fluctuations may reflect the tumultuous nature of homelessness and post-homelessness journeys, or it may reflect localised changes to services (e.g. a reduction in mental health services in the area), as just a couple of examples. Overall, however, a lower proportion of both Js and Es in the fully matched sample were experiencing extremely severe anxiety at Wave 7 than at Baseline.

With respect to stress, Js in the fully matched sample had slightly higher scores than Es at Baseline and slightly lower scores at Wave 7, though scores for both groups were lower at Wave 7 relative to Baseline (Figure 14). Within the fully matched sample, Js had mean stress scores of 8.8 at Baseline (Australian mean: 4.0; Crawford et al. 2011). These scores steadily decreased, reaching 5.7 at Wave 5, before increasing to 7.4 at Wave 6, and decreasing back to 5.9 at Wave 7. The fully matched E group recorded a mean stress score of 7.9 at Baseline, reducing to 6.3 by Wave 4, increasing slightly to 6.6 at Wave 5, increasing sharply to 7.6 at Wave 6, before decreasing to 6.1 at Wave 7.

Figure 14 Mean stress scores on the DASS21, Baseline – Wave 7, by randomisation outcome (fully matched sample)



With respect to the proportion of Js and Es in the fully matched sample in each category of stress on the DASS21, there is a fairly large increase in those experiencing 'normal' levels of stress between Baseline and Wave 7 (47.8% at Baseline to 65.2% at Wave 7 for Js; 53.6% at Baseline to 71.4% at Wave 7). Among both groups, this increase appears to arise from a shift from the 'mild' category of stress to the 'normal' category, as well as a reduction in the proportion of those experiencing 'extremely severe' stress. Notably, among both Js and Es in the full matched sample, none reported stress scores that placed them in the 'extremely severe' category of stress at Wave 7 (a reduction from 13.0% and 14.3% at Baseline for Js and Es, respectively).

As a substantial proportion of both Js and Es (though moreso Js) became housed between Baseline and Wave 7, the reduction in stress may be attributable to a reduction in stressors related to housing. However, in light of the relatively low proportions of participants reporting severe or extremely severe stress at any stage, it seems likely that these participants, having experienced chronic homelessness, have become accustomed to having a high number of stressors in their lives and are resilient in dealing with these stresses.

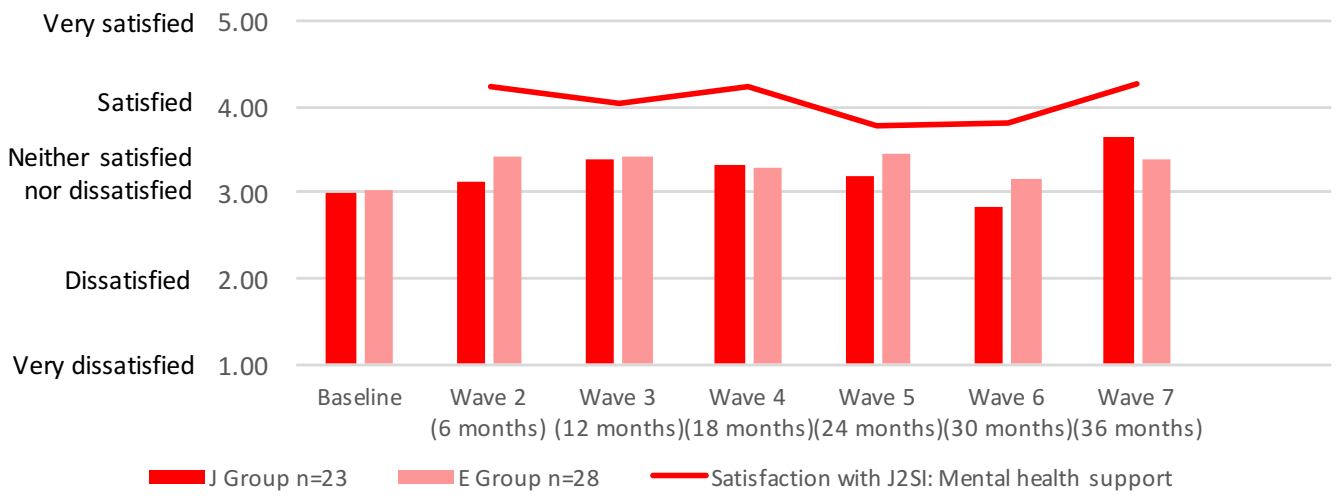
Table 11 Proportion of J2SI research study participants in each category of stress on the DASS21 (%), Baseline – Wave 7, by randomisation outcome (fully matched sample)

		Baseline	Wave 2 6 months	Wave 3 12 months	Wave 4 18 months	Wave 5 24 months	Wave 6 30 months	Wave 7 36 months
J Group n=23	Normal	47.8	60.9	73.9	65.2	65.2	56.5	65.2
	Mild	21.7	13.0	4.3	8.7	17.4	8.7	8.7
	Moderate	4.3	17.4	8.7	17.4	8.7	17.4	13.0
	Severe	13.0	4.3	13.0	8.7	4.3	8.7	13.0
	Extremely Severe	13.0	4.3	0.0	0.0	4.3	8.7	0.0
		100.0	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
E Group n=28	Normal	53.6	67.9	64.3	67.9	67.9	60.7	71.4
	Mild	14.3	7.1	10.7	3.6	10.7	10.7	10.7
	Moderate	7.1	10.7	21.4	17.9	7.1	10.7	7.1
	Severe	10.7	10.7	3.6	10.7	10.7	10.7	10.7
	Extremely Severe	14.3	3.6	0.0	0.0	3.6	7.1	0.0
		100.0	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

In summary, psychological distress, depression, anxiety and stress decreased between Baseline and Wave 7 for both the J group and the E and I group. For depression and stress, Js started with slightly higher levels than Es and Is, and finished with slightly lower levels. For anxiety, Js both started and finished with slightly higher levels, while psychological distress scores were exactly the same among Js and Es and Is at Wave 7. Es reported marginally lower psychological distress scores. Among Js, Es, and Es and Is, scores on all mental health measures fluctuated over the course of the research study. As the measures used ask participants to reflect on how they have felt over the prior week or four weeks, these minor fluctuations in scores likely reflect the constantly changing nature of life, such that challenging, stressful, and different events happen frequently. Given that substantial proportions of both groups were transitioning from chronic homelessness to permanent housing, it is not unreasonable to suggest that at least some of these individuals were facing similar challenges and positive outcomes relating to this transition at similar times that then affected the mean scores on mental health dimensions.

Our final topic of investigation in terms of mental health outcomes is participant self-assessed satisfaction with their mental health outcomes. Among both Js and Es in the fully matched sample, satisfaction with mental health outcomes fluctuates between waves and is generally quite low. At Baseline, among the fully matched sample, both Es and Js report mean satisfaction with mental health of 3.0 (out of 5); at Wave 7, satisfaction with mental health was 3.7 for Js and 3.4 for Es. Mental health satisfaction peaked at the Wave 7 for Js, but troughed at Wave 6, while for Es mental health satisfaction was lowest at Baseline and highest at Wave 7. See Figure 15 for a visual representation of these figures. In terms of satisfaction with mental health support from the J2SI program, Js in the fully matched sample report quite high satisfaction at Wave 2 (4.2/5), slightly lower satisfaction at Wave 3 (4.0), returning to 4.2 at Wave 4, dipping to 3.8 at Wave 5, before climbing to 3.8 at Wave 6 and the eventual peak of 4.3 at Wave 7. These minor fluctuations in satisfaction with one's mental health and the support provided by J2SI may represent the different foci of support at different stages of the program, or may indeed reflect the non-linear journey of mental health management and recovery.

Figure 15 Mean satisfaction with outcomes achieved in mental health and mental health support from J2SI, by wave, by randomisation outcome (fully matched sample)



Alcohol and other drug use

Substance use, substance dependence and high risk use is common among homeless individuals, dramatically increasing health risks and mortality risk (Galea & Vlahov, 2002). The World Health Organisation's Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) was designed to measure hazardous and harmful use of a range of harmful substances, namely tobacco, alcohol, cannabis, cocaine, amphetamine-type stimulants, inhalants, sedatives, hallucinogens, opioids and 'other drugs'. The Total Substance Involvement Score (TSIS) measures risk across all substances, with each substance weighted according to its potential health risks. Among the annual-matched sample, J group participants reported a mean TSIS of 89.6 and E group participants reported a mean TSIS of 98.1 at Baseline. For both Js and Es there was a steady reduction in TSIS over the course of the study to 63.4 and 68.4, respectively, at Wave 7 (Figure 16).

Examining high risk use by substance type, Table 12 outlines the change in the proportion of J2SI Phase 2 research study participants in the matched sample (those that completed both Baseline and Wave 7) that were in the high risk category at Baseline and Wave 7. Between Baseline and Wave 7, there are marked decreases in the proportions of both Js and Es that are in the high risk category for each substance. Notably, tobacco products, for which 21.6% of Js and 18.9% of Es (17.2% of the E and I group) were in the high risk category at Baseline, were not used in a high risk manner by any participants at Wave 7. No participants in the matched sample were at high risk for cocaine or inhalant use at Baseline or Wave 7, and the small proportion (1.9% of Es and 1.6% of Es and Is) that were in the high risk category for hallucinogens at Baseline were no longer in the high risk category at Wave 7. While 10.8% of Js and 22.6% of Es were at high risk with respect to their alcohol use at Baseline, this proportion reduced to just 2.7% at Wave 7. Similarly, 22.6% of Es were at high risk use of alcohol at Baseline, compared with 7.7% at Wave 7. The proportion of high risk amphetamine users within both the J group and the E group also decreased between Baseline and Wave 7 – from 16.2% to 2.7% among Js and from 20.8% to 5.8% for Es. Proportions were extremely similar for opioids; 16.2% of Js and 22.6% of Es were at high risk for opioid use at Baseline, compared with 2.7% and 5.8% at Wave 7, respectively.

Figure 16 Total Substance Involvement Score on the WHO ASSIST, by year, by randomisation outcome (annual matched sample)

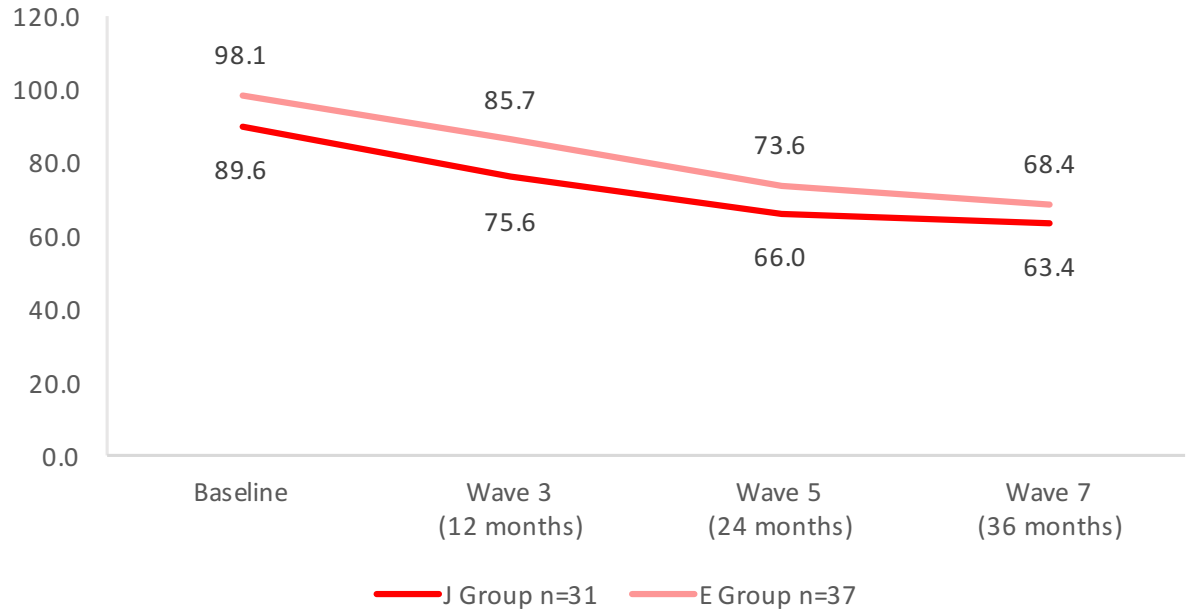


Table 13 outlines the proportion of Js and Es in the matched sample using illicit substances (i.e. excluding alcohol and tobacco) at Baseline and Wave 7, by the number of substances used in the three months prior to survey. Among the J group, the proportion of the J group that reported using no substances at all in the 3 months prior to survey increased from 13.5% at Baseline to 35.1% at Wave 7, and the proportion of Es using no substances increased from 24.5% to 30.8%. The proportion of J group participants using three or more substances in the three months prior to survey halved from 32.4% at Baseline to 16.2% at Wave 7; among Es, 45.3% were using three or more substances at Baseline, which reduced to 36.5% at Wave 7.

Figure 17 and Figure 18 visually depict the proportion of Js and Es in the annual matched sample in the high risk category for amphetamine-type stimulants and opioids each year, respectively. There is a clear downward trend in the proportion of both Js and Es engaging in high risk use of amphetamine-type stimulants between Baseline and Wave 7.Among Js, there is a decrease from 12.9% at Wave 3 to 0.0% at Wave 5, stabilising to 3.2% at Wave 7. Among Es, 27.0% were engaged in high risk use of amphetamine-type stimulants at Baseline, decreasing to 8.1% at Wave 3, and decreasing again to 5.4% at Wave 5, remaining at 5.4% at Wave 7. With respect to high risk opioid use, Js and Es follow a similar trajectory, such that the proportion of both groups engaging in high risk use of opioids decreases between Baseline (12.9% of Js and 27.9% of Es) and Wave 5 (0.0% of Js and 5.4% of Es), before stabilising to 3.2% and 5.4% for Js and Es, respectively.

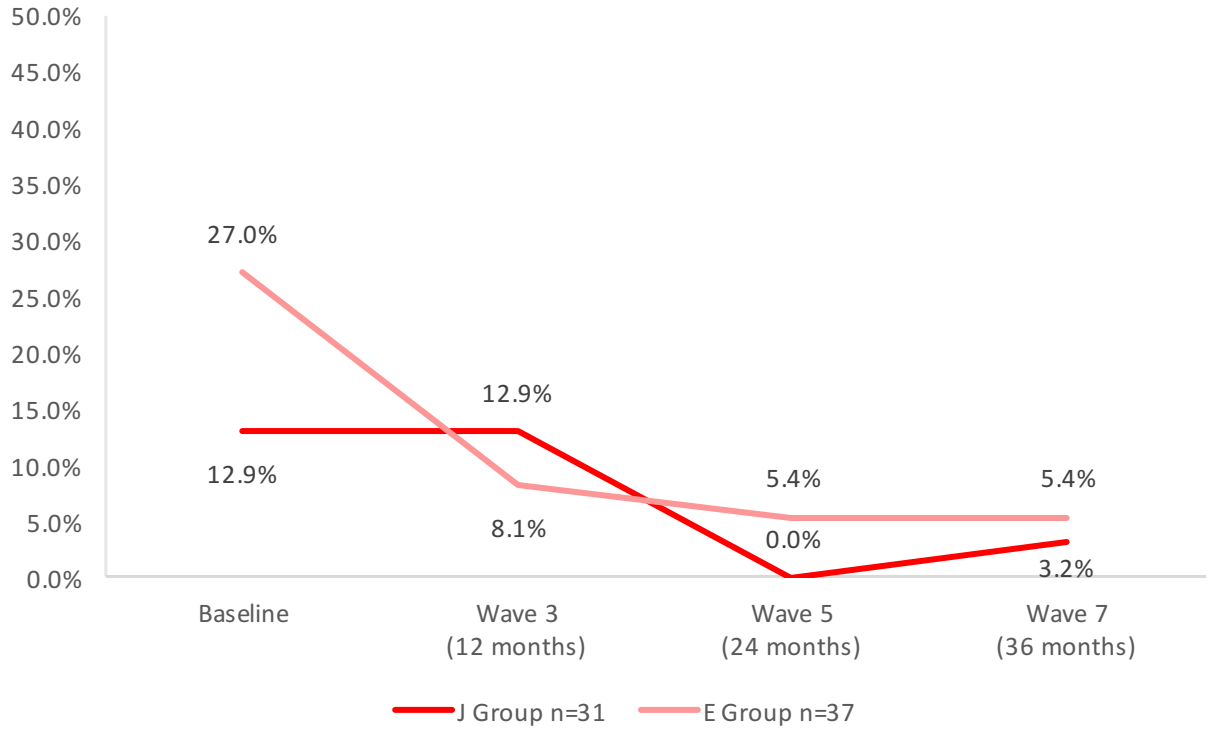
Table 12 Proportion of J2SI Phase 2 research study participants in the high risk category on the WHO ASSIST (%), by substance, Baseline and Wave 7 (matched sample)

	Baseline Sample			Matched Sample					
				Baseline			Wave 7		
	J Group n=64	E Group n=94	E and I Group n=115	J Group n=37	E Group n=53	E and I Group n=64	J Group n = 37	E Group n=53	E and I Group n=64
Tobacco products	21.9	22.3	22.6	21.6	18.9	17.2	0.0	0.0	0.0
Alcoholic beverages	12.5	24.5	20.9	10.8	22.6	18.8	2.7	7.7	6.3
Cannabis	17.2	11.7	11.3	18.9	5.7	6.3	5.4	3.8	4.8
Cocaine	3.1	1.1	0.9	0.0	0.0	0.0	0.0	0.0	0.0
Amphetamines	21.9	21.3	20.9	16.2	20.8	20.3	2.7	5.8	6.3
Inhalants	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sedatives or sleeping pills	7.8	8.5	7.8	5.4	7.5	6.3	2.7	1.9	1.6
Hallucinogens	0.0	1.1	0.9	0.0	1.9	1.6	0.0	0.0	0.0
Opioids	26.6	22.3	21.7	16.2	22.6	21.9	2.7	5.8	6.3

Table 13 Proportion of J2SI Phase 2 research study participants who had used illicit substances in the last three months (%), by number of illicit substances used, by randomisation outcome, Baseline and Wave 7 (matched sample)

Number of substances used	Baseline Sample			Matched Sample					
				Baseline			Wave 7		
	J Group n=64	E Group n=94	E and I Group n=115	J Group n=37	E Group n=53	E and I Group n=64	J Group n = 37	E Group n=53	E and I Group n=64
0	12.5	24.5	23.5	13.5	24.5	21.9	35.1	30.8	30.2
1	28.1	21.3	21.7	32.4	17.0	18.8	27.0	28.8	31.7
2	17.2	11.7	15.7	21.6	13.2	17.2	21.6	3.8	4.8
3	15.6	22.3	20.9	13.5	26.4	26.6	2.7	15.4	12.7
4	17.2	17.0	14.8	8.1	15.1	12.5	8.1	13.5	14.3
5	7.8	2.1	2.6	8.1	1.9	1.6	2.7	3.8	3.2
6	1.6	1.1	0.9	2.7	1.9	1.6	2.7	3.8	3.2
	100.0	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Mean	2.3	2.0	1.9	2.1	2.0	2.0	1.4	1.8	1.7

Figure 17 **Proportion of J2SI Phase 2 research study participants with a high level of risk on the WHO ASSIST scale for amphetamine-type stimulants, by randomisation outcome, by year (annual matched sample)**



The J2SI Phase 2 program provided strong supports around mental health issues and alcohol and drug use

Figure 18 Proportion of J2SI Phase 2 research study participants with a high level of risk on the WHO ASSIST scale for opioids, by randomisation outcome, by year (annual matched sample)

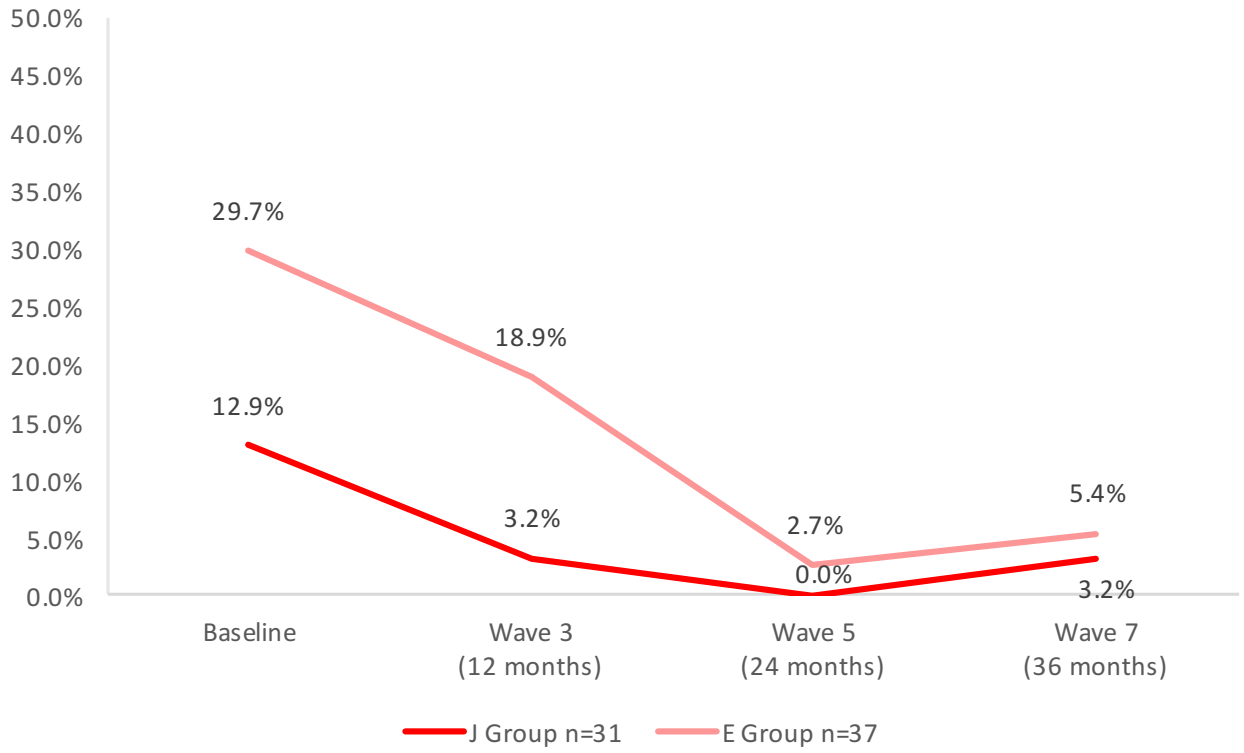


Table 14 outlines the proportion of Js, Es, and Es and Is that reported using substances at least weekly in the three months prior to survey, by type of substance. Tobacco products are the most frequently used substance, and the proportion of clients using tobacco products at least weekly increased between Baseline and Wave 7, from 79.2% at Baseline to 83.8% at Wave 7 for Js, and from 79.2% at Baseline to 84.6% at Wave 7 for Es. Cannabis was the next most commonly used substance: 37.8% of Js and 43.4% of Es used cannabis at least weekly at Baseline, decreasing to 24.3% and 32.7%, respectively, at Wave 7. Alcohol use decreased for Js, from 29.7% of the J group using alcohol at least weekly at Baseline to 21.6% at Wave 7, and increased for Es, from 34.0% of the E group using alcohol at least weekly at Baseline to 38.5% at Wave 7. While the proportion of both Js and Es using opioids and amphetamine-type stimulants at least weekly decreased between Baseline and Wave 7, roughly one in ten Js and one in five Es were using amphetamine-type stimulants at least weekly, and more than one in four Js and more than one in five Es were using opioids at least weekly in the three months prior to their Wave 7 survey.

The evidence with respect to the impact of Housing First programs on substance use is mixed. Some observational studies reported lower substance use, while randomised trials have found higher use of a particular substance (cocaine) among those with a dependency assigned to a Housing First program than those assigned to a housing based abstinence program, and others have found no difference in substance use between Housing First and control groups (Collins et al., 2012; Padgett et al. 2011; Tsemberis et al. 2012; Milby et al. 2005; Padgett et al. 2006, in Woodhall-Melnik & Dunn, 2016). It is suggested that this reflects a need for further research and design to ensure that context-, cohort-, and individual- specific treatment needs are considered when designing a Housing First program to address substance use and facilitate recovery (Woodhall-Melnik & Dunn, 2016). Given that J2SI Phase 2 is designed such that program participants set their treatment goals and agenda, the substantial decrease in TSIS and decrease in high risk substance use among Js may reflect the choice of participants to set recovery as a treatment goal. Alternatively, the transition from homelessness may reduce the perceived need for and accessibility of substances. This does not explain why the E and I group also experienced a substantial decrease in their mean TSIS nor their decreased high risk substance use. As discussed previously in relation to mental health outcomes, this may reflect the significant increased funding to homelessness services in relation to therapeutic services and specialist support provided to drug and alcohol services including outreach services

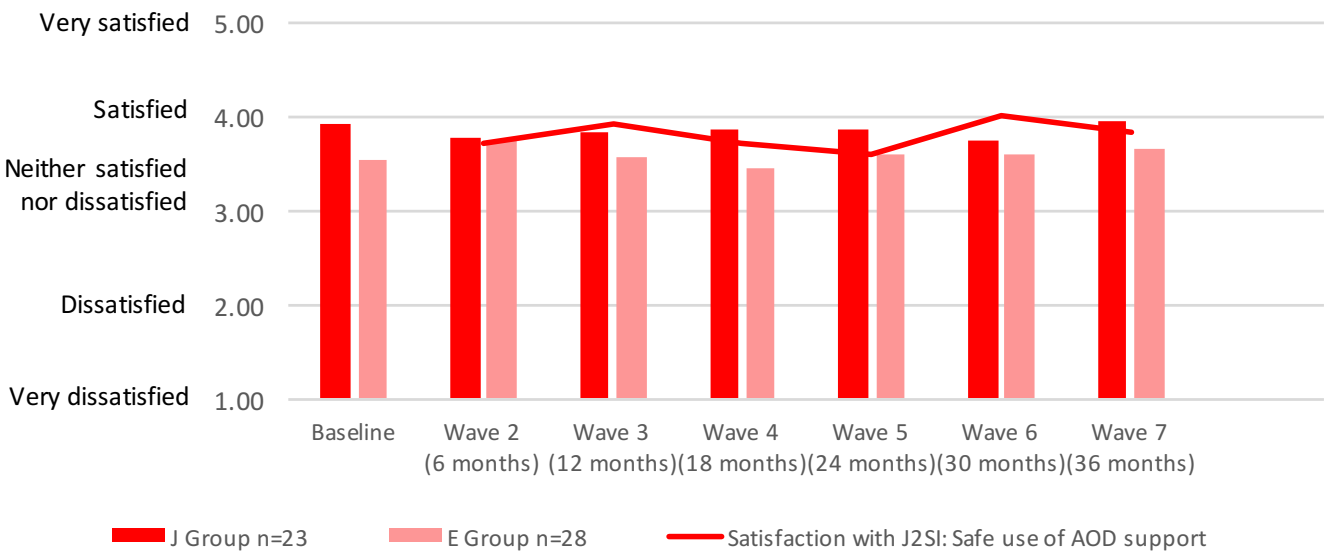
supporting rough sleepers under the Andrews Labor Government in Victoria, through initiatives such as the Ice Action Plan and the Drug Rehabilitation Plan (Department of Health and Human Services, 2013). Section 2 of the present report provides further details of the range of significant funding initiatives introduced by the Andrews Labor Government during the course of the study.

J2SI Phase 2 research study participants, particularly Js, report high satisfaction with their outcomes with regard to safe use of substances. Among the fully matched sample, the J group reports mean satisfaction between 3.7 (Wave 6) and 4.0 (Wave 7) out of 5, while Es report mean satisfaction with safe substance use outcomes between 3.4 (Wave 4) and 3.8 (Wave 2). Figure 19 visually depicts these trends. Interestingly, safe substance use was the only domain in which satisfaction among Js with the support received from the J2SI Phase 2 program was generally lower than the satisfaction with outcomes achieved. While J2SI Phase 2 is not an intervention specifically for alcohol and other drug recovery, given the high prevalence of drug use among the chronically homeless cohort and the relatively lower satisfaction with the support received among Phase 2 Js, support around substance use may be an area that future iterations of the J2SI program can improve.

Table 14 Proportion of J2SI Phase 2 research study participants using substances at least weekly in the three months prior to survey (%), by substance type, by randomisation outcome, Baseline and Wave 7 (matched sample)

	Baseline Sample			Matched Sample					
				Baseline			Wave 7		
	J Group n=64	E Group n=94	E and I Group n=115	J Group n=37	E Group n=53	E and I Group n=64	J Group n = 37	E Group n=53	E and I Group n=64
Tobacco products	90.6	80.9	83.5	79.2	79.2	81.3	83.8	84.6	82.5
Alcoholic beverages	32.8	38.3	37.4	29.7	34.0	32.8	21.6	38.5	33.3
Cannabis	37.5	41.5	42.6	37.8	43.4	45.3	24.3	32.7	34.9
Cocaine	1.6	1.1	0.9	0.0	0.0	0.0	0.0	0.0	0.0
Amphetamines	34.4	24.5	24.3	24.3	24.5	23.4	10.8	17.3	15.9
Inhalants	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	1.6
Sedatives or sleeping pills	26.6	21.3	20.0	24.3	26.4	21.9	5.4	13.5	12.7
Hallucinogens	0.0	1.1	0.9	0.0	1.9	1.6	0.0	3.8	3.2
Opioids	40.6	36.2	33.9	29.7	37.7	35.9	27.0	21.2	19.0

Figure 19 Mean satisfaction with outcomes achieved in safe use of alcohol and other drugs and support from J2SI for safe use of alcohol and other drugs, by wave, by randomisation outcome (fully matched sample)



Summary

The findings of the present study with respect to health are mixed. Despite J2SI Phase 2 clients being, on average, satisfied with the support they received from the program in relation to making efforts to improve their physical health, by Wave 7, there was little change in J2SI client's self-assessed physical health outcomes. However, this outcome should be read against the elevated rates of chronic disease and illness and comorbidities for the participant group on entry to the study.

The J2SI Phase 2 program provided strong supports around mental health issues and alcohol and drug use and introduced a structured trauma-informed program. Very high rates of diagnosed mental health disorders were evident among J2SI Phase 2 study participants on entry to the study. By Wave 3, J2SI Phase 2 clients scored lower on psychological distress and indicators of depression, anxiety and stress and improvements remained throughout the study. J2SI Phase 2 clients were also more satisfied with their mental health outcomes at the Wave 7 or 36-month time point and were generally satisfied with the mental health support they received from the J2SI Phase 2 program. There were particularly strong outcomes in terms of drug and alcohol use in the study. In other evaluations of homelessness programs including Housing First programs drug and alcohol use, dependence and risky use have not always shown positive change outcomes. However, in our study we have found significant improvement in alcohol and other drug domains. General and high risk use of substances decreased among J2SI Phase 2 clients between Baseline and Wave 7 and clients were satisfied with the support they received to address their substance use issues from the J2SI Phase 2 program. We also found positive change with respect to the E group in the mental health and substance use area. This may reflect the significant increased funding to homelessness services in relation to therapeutic services and specialist support provided to drug and alcohol services under the Andrews Labor Government in Victoria.

7. HEALTH SERVICE UTILISATION AND COSTS

A reduction in health service utilisation among Js relative to Es, in particular the number of times the emergency department was used, the number of days hospitalised, and the number of days spent in psychiatric units, was a major finding of the J2SI Pilot Study (Johnson et al. 2014). In this section we examine the health service utilisation outcomes for participants in the study using both the longitudinal survey results and linked administrative data findings.

Table 15 presents the average number of times that J2SI Phase 2 research study participants in the matched sample (those that completed both Baseline and Wave 7) reported that they used certain health services in the year prior to survey at Baseline and Wave 7. Both groups reported a reduction in the mean number of general practitioner (GP) visits at Wave 7 relative to Baseline, though the decrease was much greater for Es (from 14.0 visits at Baseline to 1.9 visits at Wave 7) than for Js (from 13.1 at Baseline to 11.5 at Wave 7). This may reflect a shift among Es from services more focused on general health management and prevention, such as GPs, to higher intensity treatment facilities, such as hospitals. This is supported by the changes in the number of nights Js and Es reported spending in hospital between Baseline and Wave 7. At Baseline, Js in the matched sample reported staying an average of 11.3 nights in hospital in the year prior to survey, while at Wave 7, this had reduced to a mean of 5.5 nights. On the other hand, Es in the matched sample, who had reported a mean of 4.3 nights in hospital in the year prior to Baseline, reported a mean of 10.3 nights in hospital at Wave 7.

The number of nights Js in the matched sample reported spending in mental health facilities in the year prior to survey decreased slightly from 4.2 nights at Baseline to 3.7 nights at Wave 7, while Es self-reported nights in a mental health facility increased slightly from 1.9 at Baseline to 2.1 at Wave 7. The mean number of times Js were treated as an outpatient decreased from 2.0 at Baseline to 0.8 at Wave 7, while the mean number of times Es were treated as an outpatient increased slightly from 0.8 at Baseline to 1.0 at Wave 7. The number of times Js and Es saw specialist doctors increased slightly between Baseline (0.8 and 1.2, respectively) and Wave 7 (1.8 and 1.9, respectively). Similarly, the number of times Js and Es saw an allied health professional increased from 4.5 and 4.3, respectively, at Baseline to 5.7 and 8.4, respectively, at Wave 7. Ambulance services increased slightly for both Js and Es (from 1.0 and 0.9 at Baseline, respectively, to 1.1 apiece at Wave 7).

The average number of nights spent in a drug and alcohol rehabilitation facility decreased for both Js and Es – from 10.7 at Baseline to 3.6 at Wave 7 for Js and from 2.3 at Baseline to 0 at Wave 7 for Es. Emergency department use remained quite stable (1.7 times at Baseline to 1.6 at Wave 7 for Js; 1.2 times at Baseline to 1.8 times at Wave 7 for Es. At Baseline, Js reported an average of 11.4 visits to mental health professionals in the year prior to survey. At Wave 7, this was 7.7. In the year prior to Baseline, Es saw mental health professionals an average of 5.3 times, while in the year prior to Wave 7, they saw mental health professionals an average of 6.9 times. Finally, both Es and Js reported slightly lower use of dental services at Wave 7 than Baseline – decreasing from 1.7 at Baseline to 1.0 times at Wave 7 for Js, and from 1.2 at Baseline to 1.0 times at Wave 7 for Es.

To summarise health service utilisation among the matched sample, Js usage of GPs, mental health professionals, mental health facilities, and drug and alcohol rehabilitation facilities was higher than Es at Wave 7. Use of emergency departments, hospital as an inpatient, and nurses or allied professionals was higher among Es than Js at Wave 7. Use of other services, namely specialist doctors, dental services, ambulances, and outpatient facilities, among Js and Es, was fairly comparable at Wave 7. Though the use of mental health professionals was higher among Js than Es at both Baseline and Wave 7, Js' use decreased between the two time points while Es' increased. Similarly, the number of nights Js spent in hospital halved at Wave 7 relative to Baseline, while Es' nights in hospital doubled.

Table 15 Mean self-reported health service utilisation in the year prior to survey, and costs, 2015-16 dollars, by health service, by randomisation outcome, Baseline and Wave 7 (matched sample)

Health service	Unit cost	Baseline Sample			Matched Sample					
					Baseline			Wave 7		
		J Group n=64	E Group n=94	E and I Group n=115	J Group n=37	E Group n=53	E and I Group n=64	J Group n = 37	E Group n=53	E and I Group n=64
General practitioner (times)	$49	13.67	13.78	12.67	13.14	13.98	12.76	11.51	1.94	15.13
Specialist doctor (times)	$83	0.89	1.14	1.11	0.76	1.17	1.20	1.78	1.94	2.29
Mental health professional (times)	$117	9.33	5.67	5.20	11.43	5.28	4.72	7.68	6.88	7.08
Nurse or allied health professional (times)	$70	5.30	4.10	3.50	4.51	4.26	3.81	5.68	8.38	7.57
Hospital admission (nights)	$2,052	7.94	4.71	4.14	11.32	4.28	3.63	5.46	10.33	8.68
Mental health facility (nights)	$913	2.64	2.53	2.07	4.24	1.85	1.53	3.73	2.10	1.73
Drug and alcohol rehab (nights)	$510	10.73	5.32	6.43	10.73	2.25	1.86	3.62	0.0	1.11
Emergency department (times)	$578	1.86	1.57	1.42	1.68	1.19	1.03	1.62	1.83	1.54
Outpatient (times)	$332	2.31	1.77	1.54	2.03	0.81	0.78	0.84	1.04	0.87
Ambulance (times)	$1,064	1.06	1.28	1.14	1.00	0.87	0.72	1.14	1.13	0.97
Dental services (times)	$72	1.53	1.24	1.17	1.68	1.15	1.19	0.95	0.98	1.05
TOTAL HEALTH		**$28,551**	**$18,984**	**$ 17,502**	**$36,552**	**$14,865**	**$12,674**	**$20,656**	**$26,738**	**$23,342**

Change in use of public hospitals is also examined through analysis of hospital bed days (HBD) recorded in the Victorian Admitted Episodes Database (VAED), an administrative dataset maintained by the Victorian Government Department of Health and Human Services.

Table 16 outlines descriptive statistics for the number of days J2SI Phase 2 research study participants spent in hospital (including stays in specialised mental health units) in the year prior to their Baseline survey and the years prior to the dates their Wave 3, Wave 5 and Wave 7 surveys were due, as recorded in the VAED. To calculate the hospital bed days for each 12 month period, the length of stay for each stay within the period was summed. In cases where the admission date was before the 12 month period or the separation date was after the 12 month period, only the portion of the stay that occurred within the 12 month period was included. The hospital bed days excluding same day separations and hospital in the home were also calculated (see Table 16). Admission and separation dates were not available for hospital in the home components. In cases where a stay included a hospital in the home component, the total length of stay was multiplied by the proportion of that stay that was spent in hospital. This methodology means that it is possible in some cases, that the number of hospital bed days in a 12 month period is not a whole number.

According to the administrative data, Js spent an average of 8.72 nights in hospital the year prior to Baseline, 10.42 in the year prior to their Wave 3 due date, 10.32 in the year prior to their Wave 5 surveys, and 7.32 in the year prior to their Wave 7 surveys. Es, on the other hand, spent an average of 2.38 nights in hospital in the year prior to their Baseline survey, 6.00 in the year prior to their Wave 3 due date, 5.92 in the year prior to their Wave 5, and 5.91 in the year prior to their Wave 7 survey. This pattern among both Js and Es is the same when same day separations and hospital in the home components are excluded.

While there are discrepancies between the self-report and the administrative data, there are numerous reasons for the difference, making it difficult to identify or speculate as to the reasons behind these discrepancies. The sample is different for the self-report and administrative data; while the administrative data contains the hospital stays of all consenting research study participants, the self-report data only contains the responses of those that were surveyed. The administrative data includes all hospital stays, including same day separations, hospital in the home services, and stays in a specialised mental health unit, while self-report data relates to overnight stays only and separates hospital stays and stays in mental health facilities (including stays in a mental health unit in a

public hospital). The data cut-off points are different, with the administrative data reflecting hospital stays in the 12 months prior to when the survey is due, however, the actual survey date can be up to three months after the survey due date. In addition to these differences in the data definitions, there may also be differences relating to recall bias in the self-report data. For example, it could be that the participants, when asked, reflected back on a period longer than the 12 months prior to survey (e.g. someone surveyed in April 2017 may have recalled their hospital visits from January 2016 to April 2017, rather than their hospital visits from April 2016 to April 2017), or some participants may have forgotten a hospital visit, or remember them as lasting for longer than they actually did. The literature show that overestimation of self-reported volume of health service use is found in groups who exhibit higher levels of mental distress or depression (Rhodes et al. 2002, Rhodes and Fung 2004), lower education groups and those with 'poor' perceived health status (Taube et al.1986), all of which are reported for the J2SI study population.

Examining the median values (0.0) and the quintiles at each wave, it is clear that, in line with other studies (Zaretzky et al. 2013; Flatau & Zaretzky, 2008; Flatau et al. 2018), it is a relatively small proportion of participants in both the J and E groups that account for the majority of nights in hospital. This is particularly true for the J group. Whereas no E group participant was recorded as spending more than 90 HBD in any of the 12 month periods, there are a small number of the J group with more than 90 HBD.

Table 16 Hospital bed days, including and excluding hospital in the home, by randomisation outcome, by year (linked administrative data)

	Baseline		12 months		24 months		36 months	
	J Group	E Group	J Group	E Group	J Group	E Group	J Group	E Group
Hospital bed days								
Mean	**8.72**	**2.38**	**10.42**	**6.00**	**10.32**	**5.92**	**7.32**	**5.91**
Median	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Minimum	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20th percentile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
40th percentile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60th percentile	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
80th percentile	9.00	2.20	3.80	10.00	3.00	8.20	4.40	8.40
Maximum	162.00	35.00	365.00	71.00	296.00	65.00	152.00	54.00
Hospital bed days excluding same day separations and hospital in the home								
Mean	**7.86**	**1.82**	**9.63**	**5.38**	**9.91**	**5.50**	**6.98**	**5.58**
Median	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Minimum	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20th percentile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
40th percentile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60th percentile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
80th percentile	7.40	1.20	3.00	7.40	2.40	7.00	3.20	8.20
Maximum	131.86	34.00	365.00	55.00	296.00	64.00	152.00	52.00

Note: J Group n = 57, E Group n = 88. Excludes the seven J group participants and six E group participants that passed away before the three-year anniversary of their baseline surveys.

We now turn to the issue of healthcare utilisation costs. Using the self-reported health service utilisation figures, Table 15 includes the costs of healthcare utilisation among Js and Es in the matched sample. We use the self-report data in this context because it includes all health-related expenditures and not just those associated with public hospital use as is the case with the Victorian administrative data. All costs are reported in 2015/16 dollars. Costs are derived by multiplying the mean usage by the unit cost (cost per use) of each service. Unit costs for visits to GPs, specialist doctors, dental professionals, and nurse or allied health professionals are sourced from the Australian Government Department of Health and Ageing Medicare Statistics. Unit costs for nights in a mental health facility, nights in a drug and alcohol rehabilitation facility, and ambulance occasions of service are sourced from the Australian Government Productivity Commission's Report on Government Services. Costs of hospital admissions and outpatient visits are sourced from the Independent Hospital Pricing Authority's National Hospital Cost Data Collection Cost Report, and the cost of visiting a mental health professional is sourced from the Australian Institute of Health and Welfare's Mental Health Services in Australia report.

At Baseline, the total estimated cost per J in the matched sample across all health services was $36,552. Commensurate to the unit costs, nights in hospitals ($21,290), mental health facilities ($4,604), and drug and alcohol rehabilitation facilities ($5,472) accounted for the majority of Js' Baseline health costs. At Wave 7, the total cost of self-reported health service usage among Js reduced to $20,656, accounted for mostly by a halving of hospital admission costs (to $10,264) and a two-thirds drop in drug and alcohol rehabilitation costs (to $1,847). The total cost of self-reported health service utilisation among Es at Baseline was $14,865. As with Js, the majority of Es health service utilisation costs were accounted for by nights in hospitals ($8,052), mental health facilities ($2,006), and drug and alcohol rehabilitation facilities ($1,145). At Wave 7, Es total costs of self-reported health service utilisation increased to $26,738, accounted for by a 2.5x increase in self-reported hospital admissions (to $19,415).

Summary

Consistent with the existing evidence base, utilisation of healthcare services and costs is concentrated on a relatively small group of those experiencing homelessness in this study. Among this group, an even smaller number of participants have significant effects on overall costs. Among J2SI Phase 2 clients, the average number of nights spent in hospital fell over the course of the study using both the self-report longitudinal survey data and the Victorian public hospital linked administrative data, as did nights in drug and alcohol rehabilitation. Using the broader healthcare utilisation categories reported in the survey, the total estimated cost per J in the matched sample across all health services dropped from the Baseline of $36,552 to $20,656, accounted for mostly by a halving of hospital admission costs (to $10,264) and a two-thirds drop in drug and alcohol rehabilitation costs (to $1,847).

8. JUSTICE SYSTEM INTERACTIONS AND COSTS

Interaction with the justice system is more common among the homeless population than the general population (Riordan, 2004; McNiel, Binder & Robinson, 2005). In this section we examine justice system interaction outcomes for participants in the study using the longitudinal survey results. No linked administrative data is available at this time although this is expected in the future.

Table 17 outlines the frequencies of various types of justice system interactions among J2SI Phase 2 research study participants in the matched sample. The mean number of nights spent in prison in the year prior to survey increased between Baseline and Wave 7 for both Js (from 0.05 to 10.89) and Es (from 1.36 to 12.00). The number of nights Js were held overnight by police, on average, decreased slightly from 0.78 at Baseline to 0.81 at Wave 7, while Es experienced a slight increase from 0.84 to 0.94 nights at Baseline and Wave 7, respectively. Both Js and Es experienced a marginal increase in the mean number of times they attended court for a serious matter between Baseline and Wave 7 (Js: 0.78 at Baseline and 0.81 at Wave 7; Es: 1.40 at Baseline and 1.60 at Wave 7). Both groups also experienced an increase between Baseline and Wave 7 in the number of visits to or from a parole officer in the year prior to survey, from 0.11 to 0.92 for Js and from 0.55 to 1.00 for Es.

The frequency of being stopped on the street by police remained relatively stable, increasing only slightly for both groups between Baseline and Wave 7 (from 2.19 to 2.38 for Js, and from 4.53 to 5.75 for Es). Finally, the number of times both Js and Es were stopped by police while they were in a vehicle decreased slightly between Baseline and Wave 7. At Baseline, Js reported that they were stopped in a vehicle in the year prior to survey an average of 0.95 times, while at Wave 7 this occurred an average of 0.65 times in the year prior to survey. Similarly, Es reported that they were stopped in a vehicle in the year prior to survey an average of 1.55 times at Baseline and 0.32 times at Wave 7. Patterns in justice service usage of the E and I group of the matched sample closely follow those of the E group, with the exception of being stopped on the street by police, where inclusion of the I group dramatically increases the mean number of times this interaction occurred, particularly at Wave 7. Those participants in the I group of the matched sample were slightly more likely to report that they were rough sleeping at Wave 7 (see Table 5). Therefore, the drastic increase in the number of police interactions on the street when the I group is included could be accounted for by the I group spending more time on the street.

We further examine justice system interaction among Js and Es over the course of the program using the annual matched sample. It is important to note the smaller sample size of the annual matched sample and the effect this might have on mean outcomes: one person's justice system interaction can have a major impact on the sample mean—for example, one person going to prison for 6 months will make it appear as though, on average, everyone is spending at least a couple of nights in prison—there is substantial variability in the frequency of self-reported justice system interaction between waves, particularly among the E group.

Figure 20 depicts the mean number of nights that Js and Es in the annual matched sample reported that they spent in adult prison in the year prior to survey, by year. The mean for Es spikes at Wave 3, before returning to almost zero for all other waves, while the mean for Js climbs from Baseline to Wave 5, before decreasing at Wave 7. A similar pattern emerges for Es with respect to the mean number of nights held overnight by police (Figure 21), while Js' mean stays low and relatively stable over the course of the program.

Table 17 Mean self-reported justice service utilisation and costs, by service type, 2015-16 dollars, by randomisation outcome, Baseline and Wave 7 (matched sample)

Justice service	Unit cost	Baseline Sample			Matched Sample					
					Baseline			Wave 7		
		J Group n=64	E Group n=94	E and I Group n=115	J Group n=37	E Group n=53	E and I Group n=64	J Group n = 37	E Group n=53	E and I Group n=64
Adult prison (nights)	$352	1.05	0.88	0.81	0.05	1.36	1.14	10.89	12.00	9.94
Held overnight by police (nights)	$863	0.80	1.51	1.49	0.78	0.68	0.84	0.54	0.94	0.91
Attended court for a criminal matter (times)	$869	1.52	1.43	1.42	0.78	1.40	1.33	0.81	1.60	1.39
Visits to/from a Parole Officer (times)	$137	1.02	1.70	1.40	0.11	0.55	0.45	0.92	1.00	0.83
Stopped by police on the street (times)	$137	3.68	8.74	10.97	2.19	4.53	9.89	2.38	5.75	52.72
Stopped by police in a vehicle (times)	$90	0.77	1.04	0.97	0.95	1.55	1.39	0.65	0.32	0.38
TOTAL JUSTICE		**$3,138**	**$4,378**	**$4,552**	**$1,776**	**$3,112**	**$3,826**	**$5,515**	**$7,386**	**$12,858**

Figure 20 **Mean number of nights spent in adult prison in the 12 months prior to survey, by randomisation outcome, by wave (annual matched sample)**

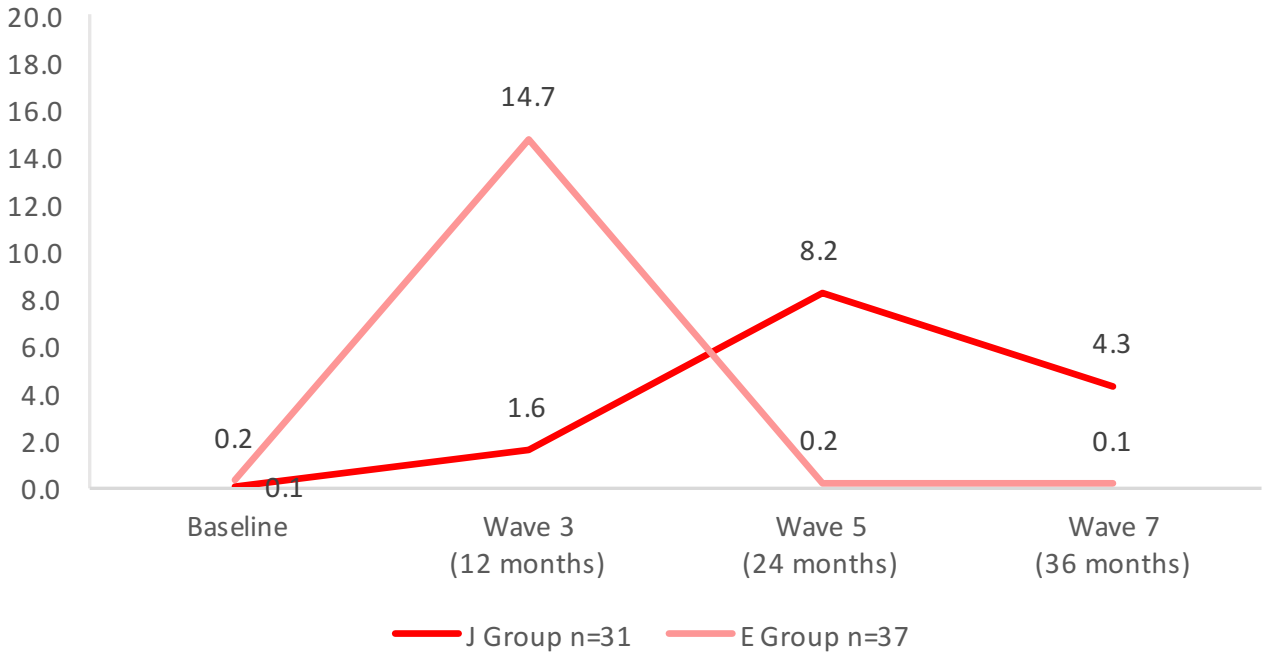
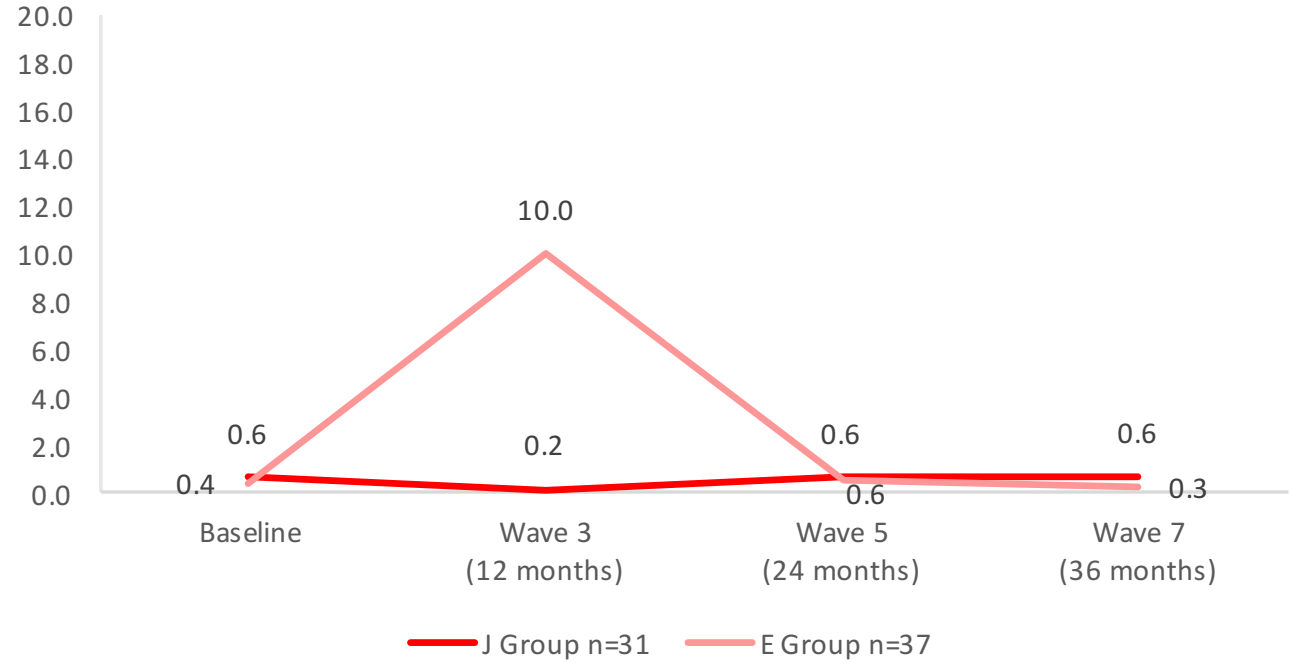


Figure 21 **Mean number of nights held overnight by police in the 12 months prior to survey, by randomisation outcome, by wave (annual matched sample)**



The mean number of times Es had attended court for a criminal matter in the year prior to survey increased between Baseline and Wave 3, before declining to below-Baseline levels at Wave 5 and increasing slightly (though remaining below Baseline levels) at Wave 7 (see Figure 22). Among Js, the mean number of times court was attended for a criminal matter was slightly higher at Wave 3 and Wave 5 relative to Baseline, but reduced to Baseline levels at Wave 7. Figure 23 illustrates the trend among Js and Es in the annual matched sample with respect to the mean number of times they experienced being stopped on the street by police. There is a downward trend among both groups, with Js on average experiencing being stopped on the street less than Es in each wave. The downward trend in both groups aligns with the increased proportion of both samples that attained housing (thus providing fewer opportunities for interactions with police on the street), while the difference between groups (i.e., that Js experience this less than Es) could be explained by the difference in the proportion of each group that are housed.

Figure 22 Mean number of times attended court for a criminal matter in the 12 months prior to survey, by randomisation outcome, by wave (annual matched sample)

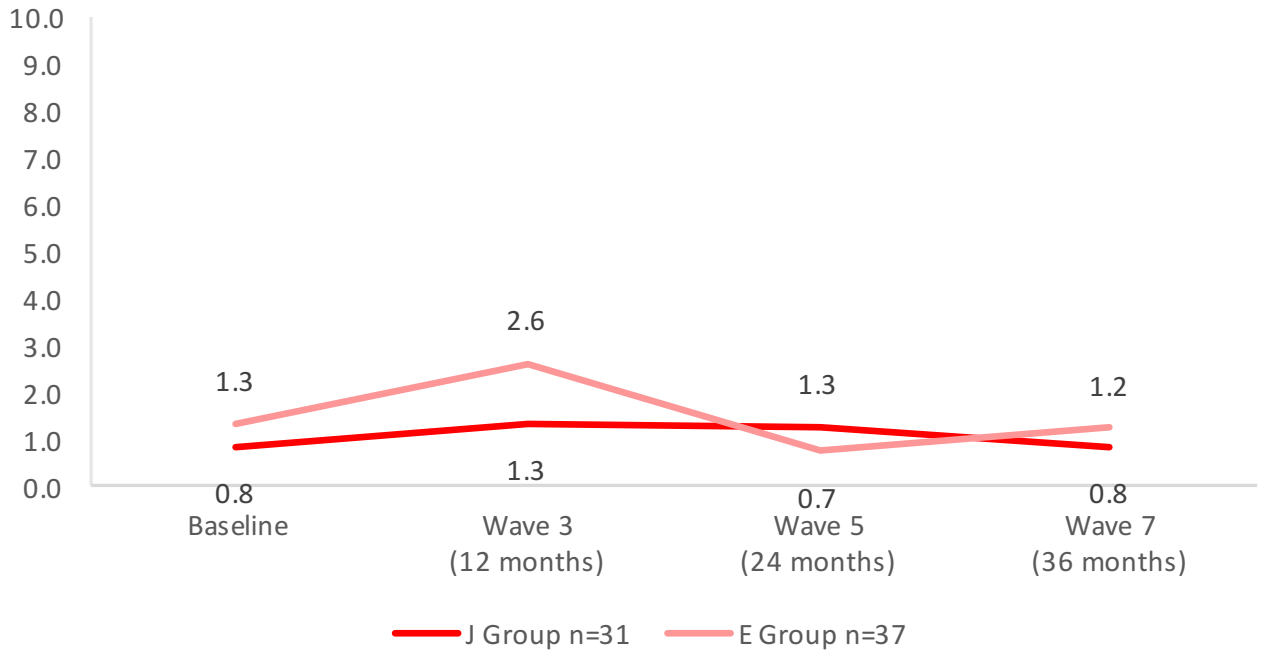
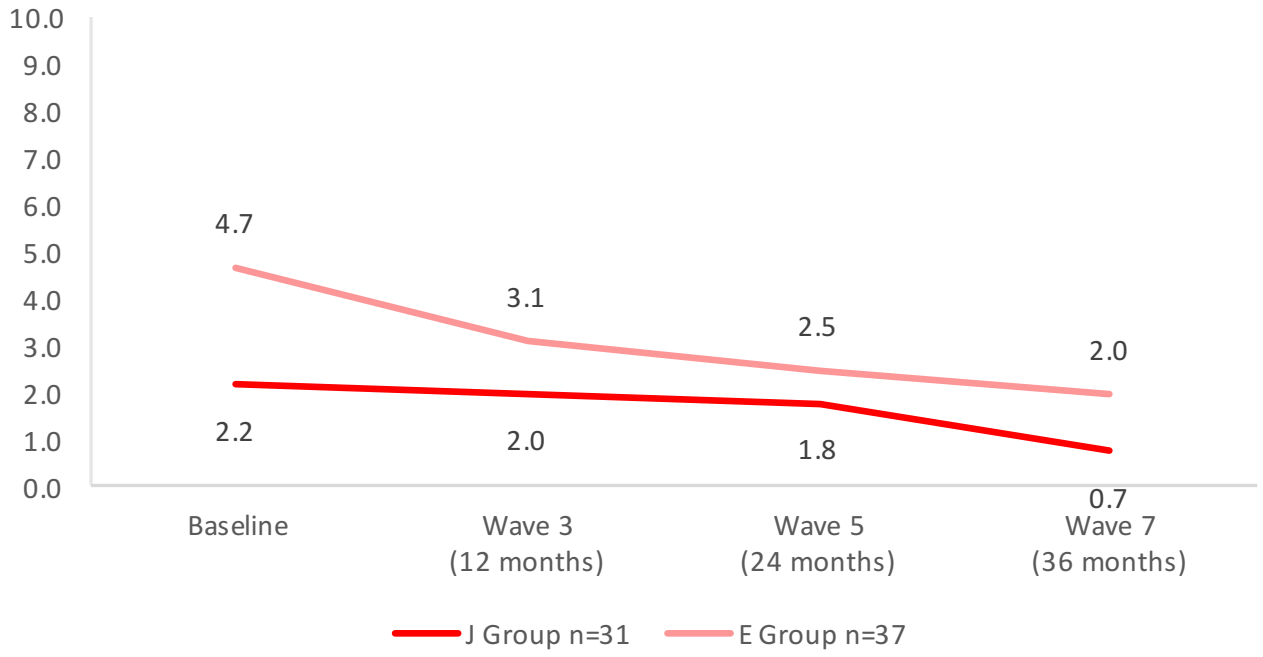


Figure 23 Mean number of times stopped by police on the street in the 12 months prior to survey, by randomisation outcome, by wave (annual matched sample)



In summary, among both the matched sample and the annual matched sample and among Js and Es, there is variation in trends with respect to justice system interactions. At Wave 7, Js and Es in the matched sample reported, on average, more nights spent in adult prison, slightly more court attendances for criminal matters, more visits to or from parole officers, more stops on the street, and fewer stops in a vehicle, relative to Baseline. In the matched sample, Js reported being held by police for slightly fewer nights at Wave 7 than Baseline, while Es reported slightly more. The trends are quite different among the annual matched sample (those that completed each yearly survey). The mean number of nights Js in the annual matched sample spent in prison increased between Baseline and Wave 5, reducing (though still to higher levels than Baseline) at Wave 7, while Es spent an average of less than one night in prison at Baseline, Wave 5 and Wave 7, with a spike to over 14 nights at Wave 3. The mean number of nights spent held by police was low and stable for Js but, once again, spiked at Wave 3 for Es. The mean number of court appearances was consistently around 1.00 per year over the four survey waves for Js in the annual matched sample, while it spiked at Wave 3 for Es before reducing to below Baseline levels at Wave 5, increasing again at Wave 7 (though still to below Baseline levels). Finally, the number of times both Js and Es in the annual matched sample were stopped by police on the street steadily decreased between Baseline and Wave 7, with Js experiencing fewer stops than Es at each wave.

Table 17 outlines the estimated costs of the self-reported justice system interactions of the matched sample. As with health service utilisation costs, justice system interaction costs are calculated by multiplying the mean number of interactions by a unit cost (cost per interaction). The unit costs for prison nights and court attendances were sourced from the Productivity Commission's Report on Government Services. The unit cost of court attendances includes the post-arrest police costs associated with court finalisation. The cost of overnight holds by police is sourced from the study Parsell et al. (2017) undertook in Queensland, and the methodology of Zaretzky et al. (2013) for calculating the hours of police time, with cost data from the Victorian Government and Victoria Police was used to calculate the cost of police stops and parole officer visits.

Among the matched sample, the cost of justice system interaction among both Js and Es was higher at Wave 7 than Baseline, and Es' costs were higher than Js at both time points. At Baseline, the estimated total cost of Js' justice system interactions was $1,776 per person, with the majority of the total accounted for by court attendances for criminal matters ($681) and overnight holds by police ($676). At Wave 7, this total cost increased to $5,515 per person, with the majority accounted for by the cost of nights spent in prison ($3,834) and, to a lesser extent, court attendances ($707). The Baseline estimated total justice system interaction cost for Es was $3,112 per person, comprised of $1,213 of costs associated with court attendances, $620 of costs associated with police stops on the street, $586 of costs of overnight holds by police, and $478 of prison night costs. At Wave 7, Es' estimated total justice system interaction costs increased to $7,386 per person, with the majority of this total accounted for by the cost of nights in prison ($4,224) and court attendances ($1,394).

In interpreting the costs associated with service usage in a non-population sample, it is important to acknowledge the impact that the usage of a single or small number of people can have on average costs. This is evident in the estimated justice costs of J2SI Phase 2 research study participants, both with respect to the substantial variation in both the J and E groups between survey waves, and with respect to the differences between the costs of the matched sample, comprised of those who completed the Baseline and Wave 7 surveys, and the annual matched sample, comprised of only those that completed each yearly survey. Among the matched sample, justice costs for both Js and Es increased between Baseline and Wave 7, with the costs of Js lower than those of Es at both time points. Examining the different types of justice system interactions, it appears that fluctuations in the justice costs are generally accounted for by a small number of participants going to prison, and the associated costs e.g. court attendances and overnight holds by police that often precede incarceration.

Summary

Interaction with the justice system was relatively low among both J2SI Phase 2 clients and control group participants, at both Baseline and Wave 7. The exception to this is the number of nights spent in prison: there was a large increase in the average reported number of nights spent in prison at Wave 7 relative to Baseline. Correspondingly, the increase in the mean number of nights spent in prison increased overall justice costs between Baseline and Wave 7 for both groups. However, these results need to be treated with caution as they are the product of the outcomes for a very small number of people in the overall study.

9. ECONOMIC PARTICIPATION

Engagement with the labour force through employment, education, and training is an important aspect of modern life that is severely hindered by long histories of homelessness together with current homelessness and significant health issues (Lehmann et al. 2007; Caton et al. 2005).

As can be seen in Table 18, at Baseline, 89.2% of Js, 69.8% of Es, and 71.9% of Es and Is in the matched sample reported that they were not in the labour force, mostly due to inability to work due to health conditions or disability (64.9% of Js, 52.8% of Es, and 53.1% of Es and Is). At Wave 7, the proportion of Js in the matched sample that were not in the labour force decreased to 78.4%, while the proportion of Es and Is in the matched sample that were not in the labour force increased to 79.7% (77.4% when Es are considered separately). In other words, less Es and Is are in the labour force at Wave 7 relative to Baseline, and more Js are in the labour force at Wave 7 relative to Baseline.

The proportion of both Js, Es, and Es and Is in the matched sample that are employed increased between Baseline and Wave 7, from 2.7% at Baseline to 8.1% at Wave 7 for Js, 3.8% to 11.3% for Es, and from 4.7% to 9.4% between Baseline and Wave 7 for Es and Is. Among Js there was also an increase in unemployment between Baseline and Wave 7, while for the E group there was a decline in unemployment. In other words, between the Baseline and Wave 7 there was a greater engagement with the labour market on the part of the J group with some of this engagement resulting in a transition to employment and some resulting in more active job-seeking.

Table 18 Labour force status of J2SI research study participants (%), by randomisation outcome, Baseline and Wave 7 (matched sample)

	Baseline Sample			Matched Sample					
				Baseline			Wave 7		
	J Group n=64	E Group n=94	E and I Group n=115	J Group n=37	E Group n=53	E and I Group n=64	J Group n = 37	E Group n=53	E and I Group n=64
In the labour force	**20.3**	**22.3**	**21.7**	**10.8**	**30.2**	**28.1**	**21.6**	**22.6**	**20.3**
Employed	3.1	5.3	5.2	2.7	3.8	4.7	8.1	11.3	9.4
Unemployed - Actively seeking work and able to work	17.2	17.0	16.5	8.1	26.4	23.4	13.5	11.3	9.4
Not in the labour force	**79.7**	**77.7**	**78.3**	**89.2**	**69.8**	**71.9**	**78.4**	**77.4**	**79.7**
Home duties	3.1	4.3	3.5	5.4	7.5	6.3	10.8	1.9	1.6
Student	0.0	1.1	0.9	0.0	0.0	0.0	5.4	1.9	3.1
Actively seeking work and not able to work	7.8	5.3	5.2	8.1	3.8	4.7	0.0	3.8	3.1
Not engaged in work and not actively looking for work	9.4	11.7	12.2	10.8	5.7	7.8	0.0	24.5	25.0
Unable to work due to health condition or disability	59.4	55.3	55.7	64.9	52.8	53.1	62.2	45.3	46.9
Other, not specified	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

In seeking to examine trajectories over time we use the fully matched sample as labour force status questions are included in each wave. The fully matched sample is of course a smaller sample than the matched sample and is not representing the same sample as the matched sample. When examining the fully matched survey (see Figure 24), Js and Es exhibit similar patterns with respect to the proportions of each group that were in the labour force at each wave. The proportion of Js that are in the labour force peaks at 26.1% at Wave 4 and Wave 7, while Es peak at 32.1% at Baseline, Wave 4 and Wave 6. At Wave 7, the proportion of Js in the labour force increased to 26.1% from 13.0% at Baseline, whereas the proportion of Es in the labour force decreased to 25.0% from 32.1% at Baseline.

Satisfaction with employment readiness among both Js and Es in the fully matched sample is quite low, though modestly increases from a mean of 2.4 and 2.2, respectively, at Baseline, to 3.2 in both groups at Wave 7. The trend in satisfaction with employment among Js is a small but steady climb over time, while Es fluctuate between waves. Satisfaction among Js with the support received to develop employment readiness is somewhat variable, though still stable, among the fully matched sample: at Wave 2 and 3, satisfaction is 3.4, at Wave 4 and 5 it climbs to 3.7, dropping slightly to 3.5 at Wave 6, before climbing to 3.8 at Wave 7. See Figure 25 and Figure 26 for trends in satisfaction with outcomes and support for employment readiness and employment.

Figure 24 Proportion of participants that were employed or actively seeking employment in the week before the survey (unemployed), by wave, by group (fully matched sample)

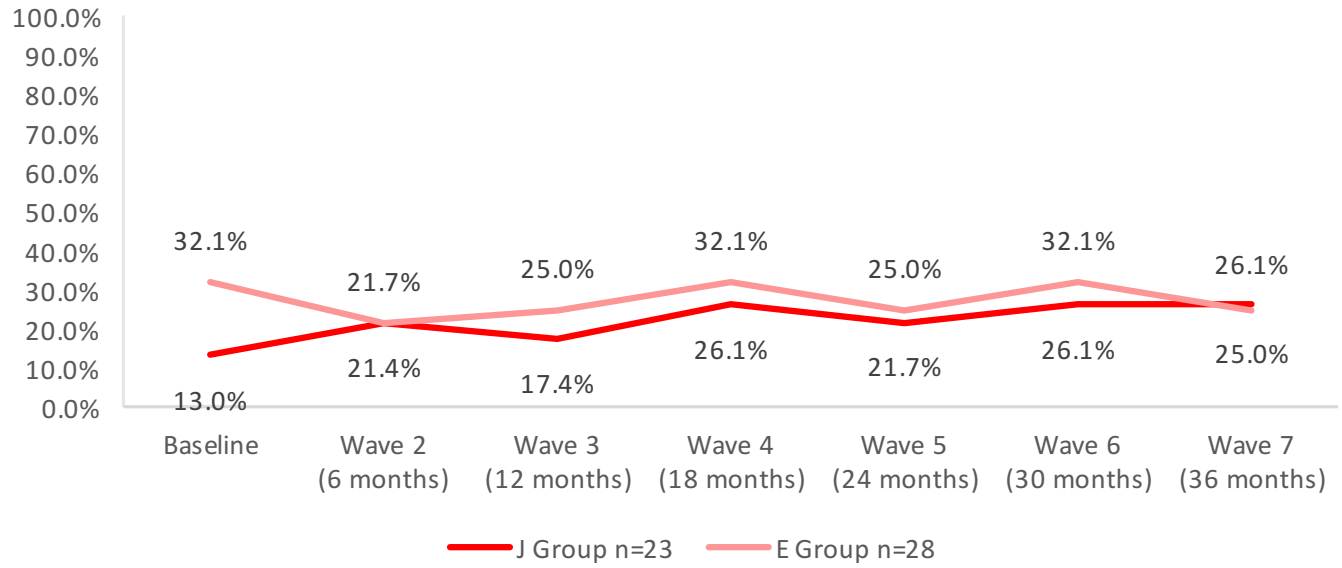


Figure 25 Mean satisfaction with outcomes achieved in employment readiness and employment readiness support from J2SI, by wave, by randomisation outcome (fully matched sample)

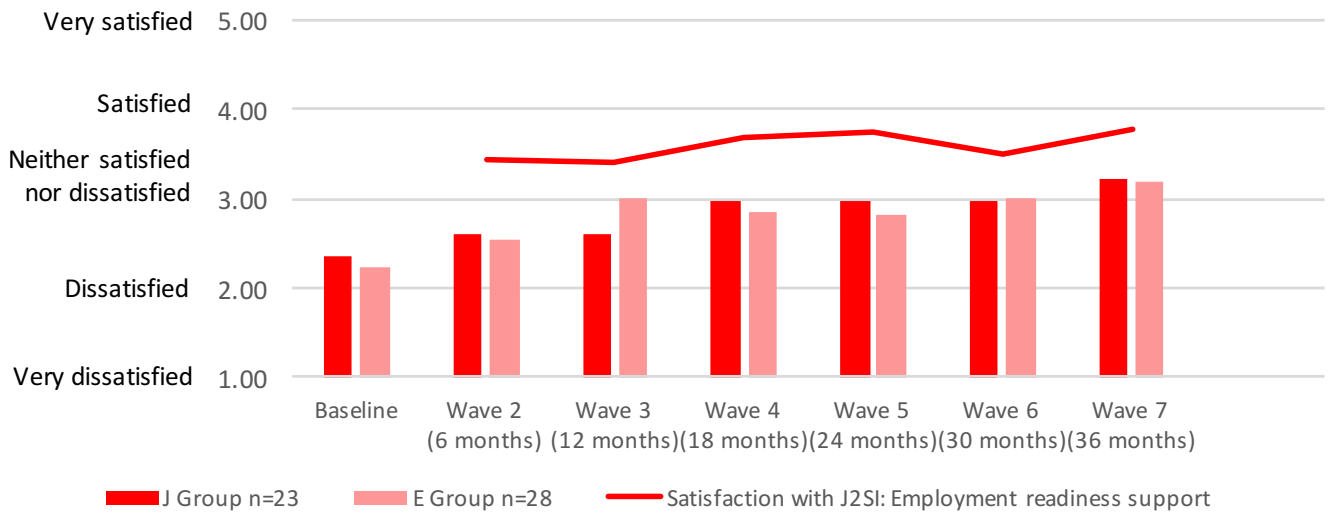


Figure 26 Mean satisfaction with outcomes achieved in employment and employment support from J2SI, by wave, by randomisation outcome (fully matched sample)

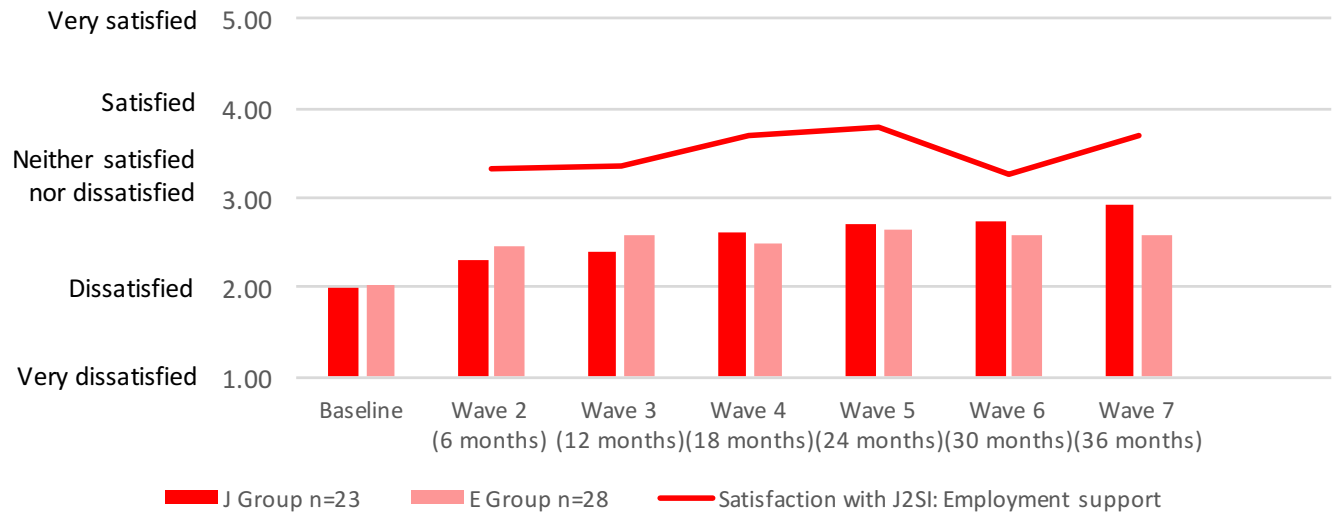
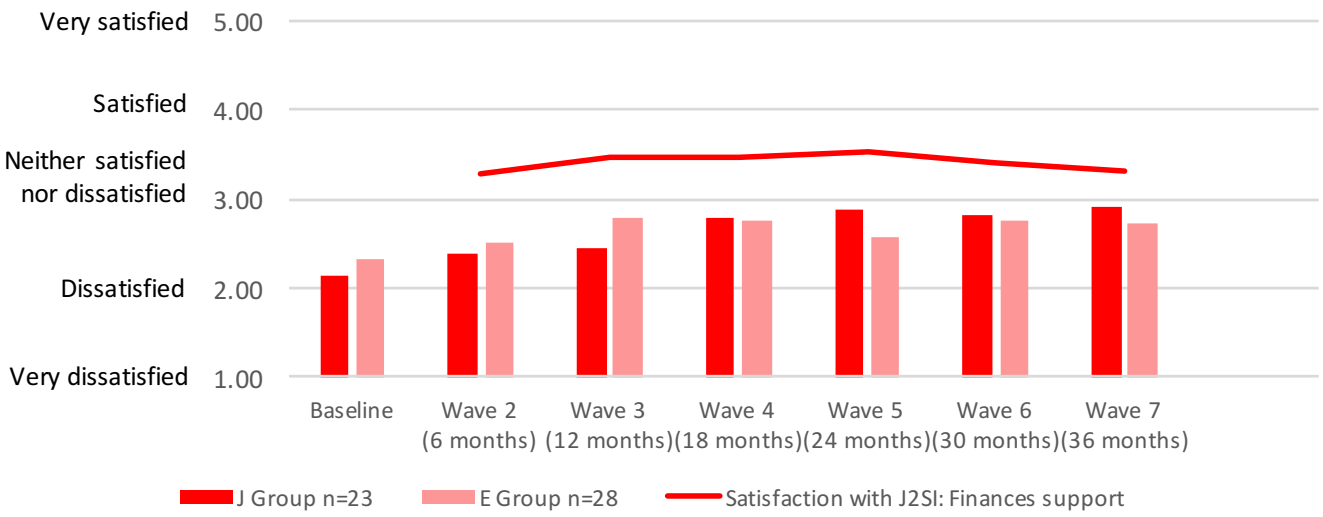


Figure 27 Mean satisfaction with outcomes achieved in finances and financial support from J2SI, by wave, by randomisation outcome (fully matched sample)



Unsurprisingly, given the reliance on income support payments (Newstart Allowance and Disability Support Pension in the main) satisfaction with finances is low among both Js and Es in the fully matched sample. Satisfaction with finances in the J group slightly but steadily climbs from 2.1 (out of 5) at Baseline to 2.9 at Wave 7 reflecting somewhat higher employment numbers. Among Es, satisfaction climbs from 2.3 at Baseline to 2.8 at Wave 3 and 4, decreasing to 2.6 at Wave 5, increasing again at Wave 6 to 2.8, then decreasing to 2.7. Among Js, satisfaction with support from J2SI in the domain of finances hovers fairly stably around 3.4 out of 5 across Wave 2 to Wave 7. Results regarding satisfaction with finances and J2SI program support for finances among the fully matched sample are presented in Figure 27.

Summary

There was an increase in the number of J2SI clients who transitioned to paid employment and the number J2SI clients who were actively engaged in the labour market through job-seeking activity, at Wave 7 as compared with the Baseline. However, the vast majority of clients remained not in the labour force. Most did not feel ready to enter the labour workforce although job readiness had improved since the Baseline. In terms of those not in the J2SI program, attachment to the labour market showed little change from the Baseline. There was a slight increase in employment between the Baseline and Wave 7 but unemployment fell indicating a drop in job-seeking activity among the E group. Reflecting the absence of a significant transition into employment among participants in the J2SI Phase 2 study and the low level of income support payments, most felt unsatisfied with their financial resources.

10. SOCIAL CONNECTEDNESS, SOCIAL SUPPORT AND QUALITY OF LIFE

As the name of the program suggests, the ultimate goal of the J2SI Phase 2 program is to increase the social inclusion of formerly chronically homeless people in Melbourne. It is recognised that this is a complex and long-term goal that requires coordination and interaction with the mainstream community and the broader service system to provide intensive case management, therapeutic intervention, specialist services, and skill building to increase capacity and capability for independence. Social inclusion also takes time to achieve and the capacity of an individual to achieve social goals is influenced by a range of other issues that also require resolution, such as 'getting settled'. This was elegantly captured by a J2SI client (J5) at the 36-month mark of the qualitative component of the research study (Thielking et al., 2020):

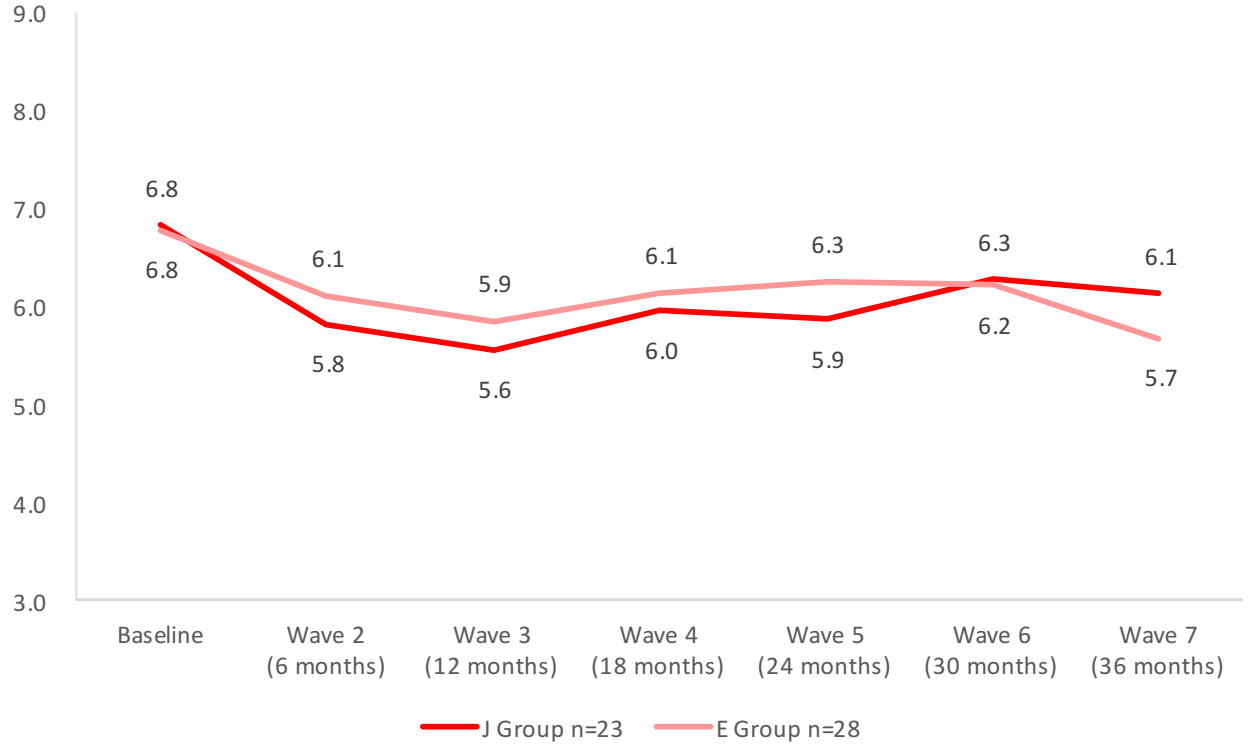
"I think the first two years, I don't think you'd have to worry about social inclusion. It's more about getting that person settled and to a routine. And even helping them find the best resources they can and then, actually, it's making them more independent, and then, the social circles and then everything else. Because it's…the first year goes fast so quick. There's so much going on, you don't have time to settle down…by the time the second year comes around, okay, you find out a few problems, some may have come back. You may have gone back to drugs and alcohol and you need to work that one out again."

J2SI Phase 2 client

Positive social support may also be particularly difficult to attain for recently housed individuals as chronic homelessness is associated with lower social capital (Padgett et al. 2008), and the social connections formed 'on the street' can pose a risk of re-entering homelessness (Mayock et al. 2011; Thompson et al. 2004). However, social support is an important factor affecting non-housing outcomes, including quality of life, in formerly homeless populations (Johnstone et al. 2015).

We begin the examination of social outcomes from the J2SI Phase 2 program by considering loneliness felt by participants in the study. The University of California – Los Angeles (UCLA) 3-item Loneliness Scale (3-ILS) (Hughes et al. 2004) is a short questionnaire for measuring loneliness. Both Js and Es in the matched sample reported lower loneliness scores in Wave 7 relative to Baseline. Out of a maximum loneliness score of 9, among the fully matched sample, the J group had a mean loneliness score of 6.8 at Baseline, decreasing to 6.1 at Wave 7. The fully matched E group's mean loneliness score was 6.8 at Baseline, decreasing to 5.7 at Wave 7. Figure 28 presents the changes in 3-ILS scores among Js and Es in the fully matched sample between Baseline and Wave 7. Though both groups experienced a slight decrease in loneliness at the end of the program versus the beginning, Js' higher levels of loneliness relative to Es may be explained by the higher proportion of Js in permanent housing, as the transition from homelessness would have also represented a transition in social relationships (as connections made 'on the street' may be lost).

Figure 28 Mean three item loneliness scale score, by wave, by randomisation outcome (fully matched sample)



The World Health Organisation Quality of Life – Brief (WHOQOL- BREF) measures quality of life on four domains: physical health, psychological, social relationships, and environment. In line with the results regarding higher levels of loneliness among J group participants relative to E and I group participants, the social relationships domain of the WHOQOL-BREF is the only domain where Js and Es and Is differ substantially (such that Js have lower scores). At Baseline, Js in the matched sample had mean scores of 39.65 on the social relations domain, increasing marginally to 40.54 at Wave 7. Participants in the E and I group in the matched sample had a mean score of 38.69 on the social relationships domain at Baseline, increasing to 53.57 at Wave 7. Similarly, examining the E group alone, the mean score on the social relationships domain at Baseline was 46.43, and 52.73 at Wave 7. Scores on the other domains (physical health, psychological, and environment) increased between Baseline and Wave 7 by extremely similar amounts for both Js, Es, and Es and Is (see Table 19).

Figure 29 to Figure 32 depict the changes in WHOQOL scores by domain (physical health, psychological, social relationships, and environment) for Js and Es in the fully matched sample across the seven survey waves. Among both Js and Es, scores improve on all domains between Baseline and Wave 7.

Scores for both groups are extremely similar in the physical health domain (46.35 at Baseline and 61.22 at Wave 7 for Js; 45.21 at Baseline and 60.14 at Wave 7 for Es) and environment domain (49.46 at Baseline and 61.87 at Wave 7 for Js; 48.83 at Baseline and 61.86 at Wave 7 for Es), with Js reporting marginally higher scores than Es at both time points. In the psychological domain, Js start the program with slightly higher scores than Es (48.26 versus 45.68), with this gap widening at Wave 7, where Js' mean score was 61.22 compared with Es' mean score of 53.71. With respect to the social relationships domain, the mean score for the fully matched E group increased from 32.18 at Baseline to 53.29 at Wave 7, while scores for the J group remained fairly stable, increasing slightly from 41.52 at Baseline to 44.83 at Wave 7.

Table 19 **Mean scores on the WHOQOL-BREF, by quality of life domain, by randomisation outcome, Baseline and matched Baseline and Wave 7 (matched sample)**

	Baseline Sample			Matched Sample					
				Baseline			Wave 7		
	J Group	E Group	E and I Group	J Group	E Group	E and I Group	J Group	E Group	E and I Group
Physical Health	44.60	44.26	45.09	45.49	44.30	45.44	56.51	60.08	58.03
Psychological	45.42	44.78	45.76	44.76	46.43	47.34	51.78	52.73	54.24
Social Relationships	38.65	39.00	39.94	39.65	36.23	38.69	40.54	52.52	53.57
Environment	44.51	46.37	46.75	45.30	46.68	47.94	55.76	57.38	57.11

Figure 29 **WHOQOL Physical Health domain scores, by wave, by randomisation outcome (fully matched sample)**

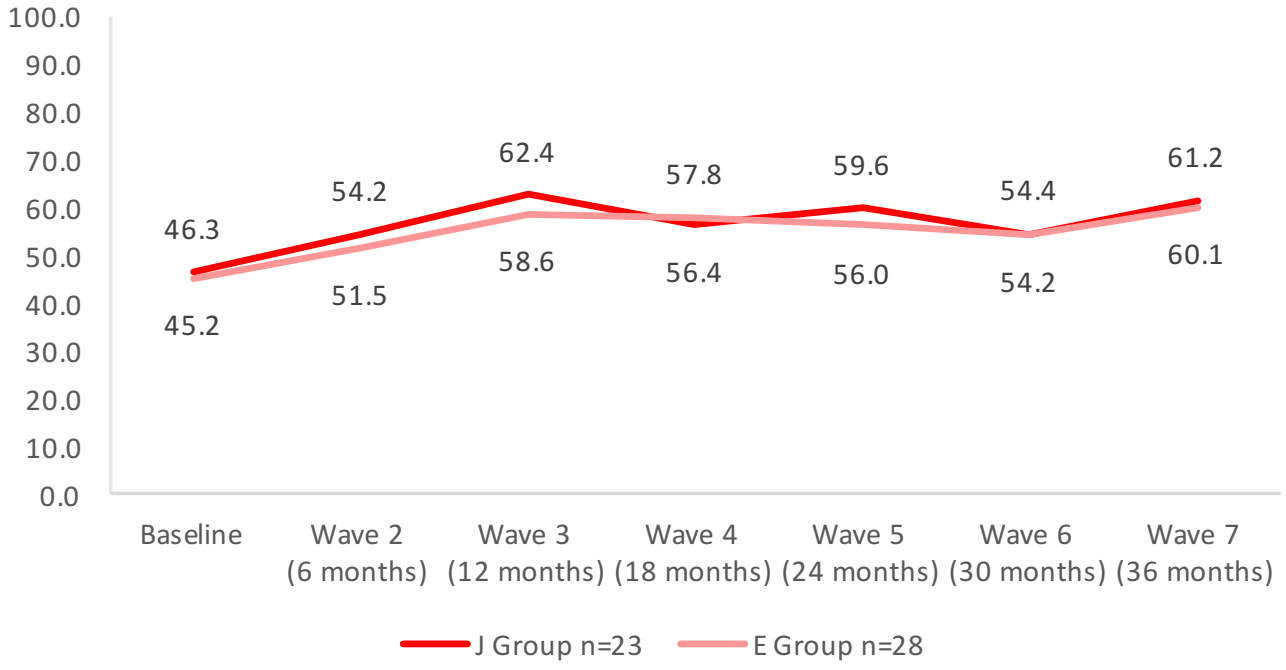


Figure 30 **WHOQOL Psychological domain scores, by wave, by randomisation outcome (fully matched sample)**

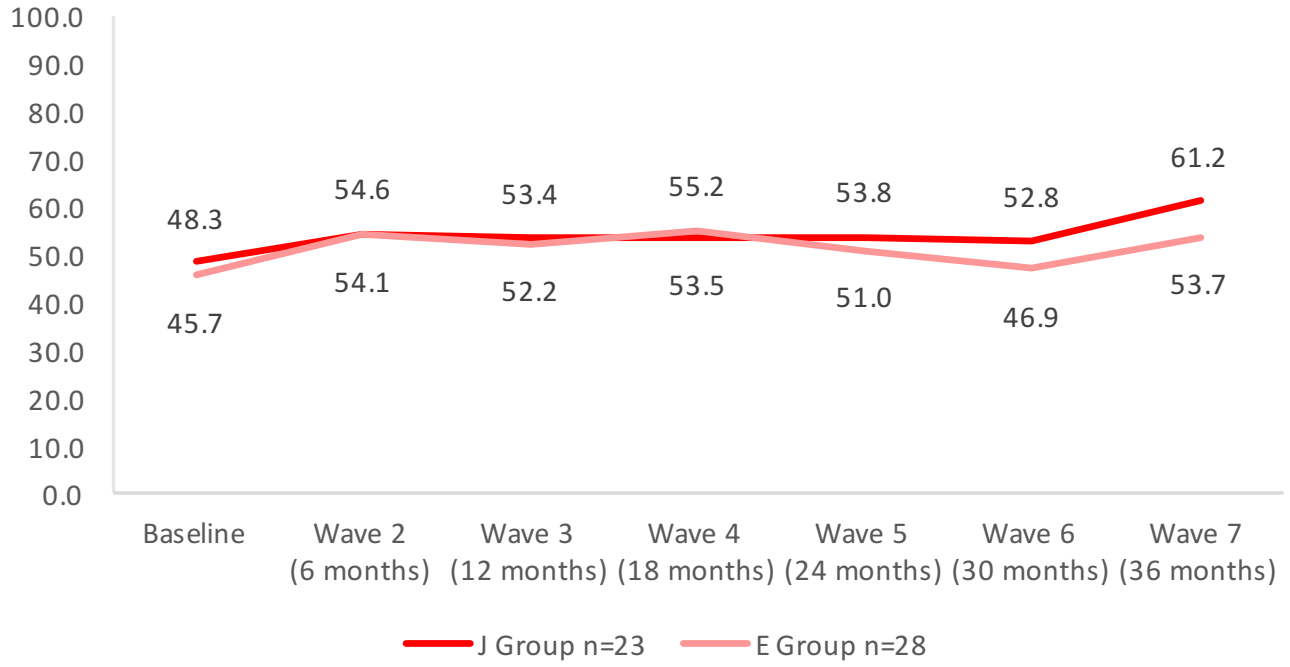


Figure 31 **WHOQOL Social Relationships domain scores, by wave, by randomisation outcome (fully matched sample)**

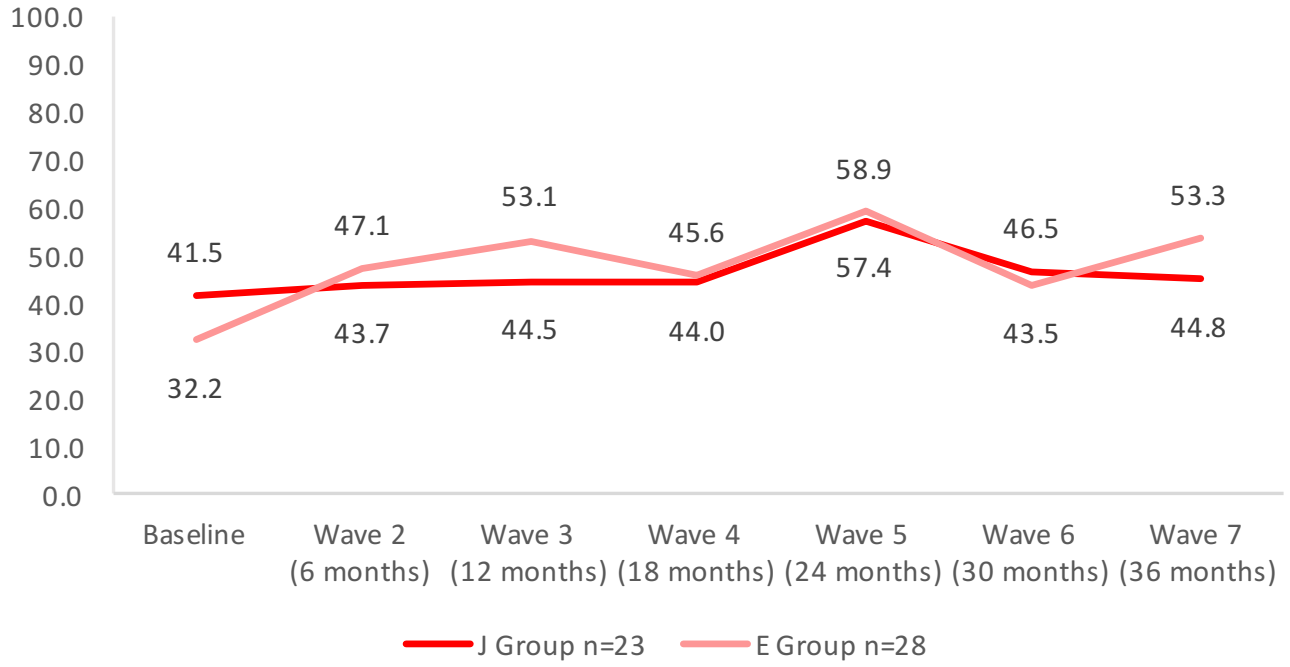
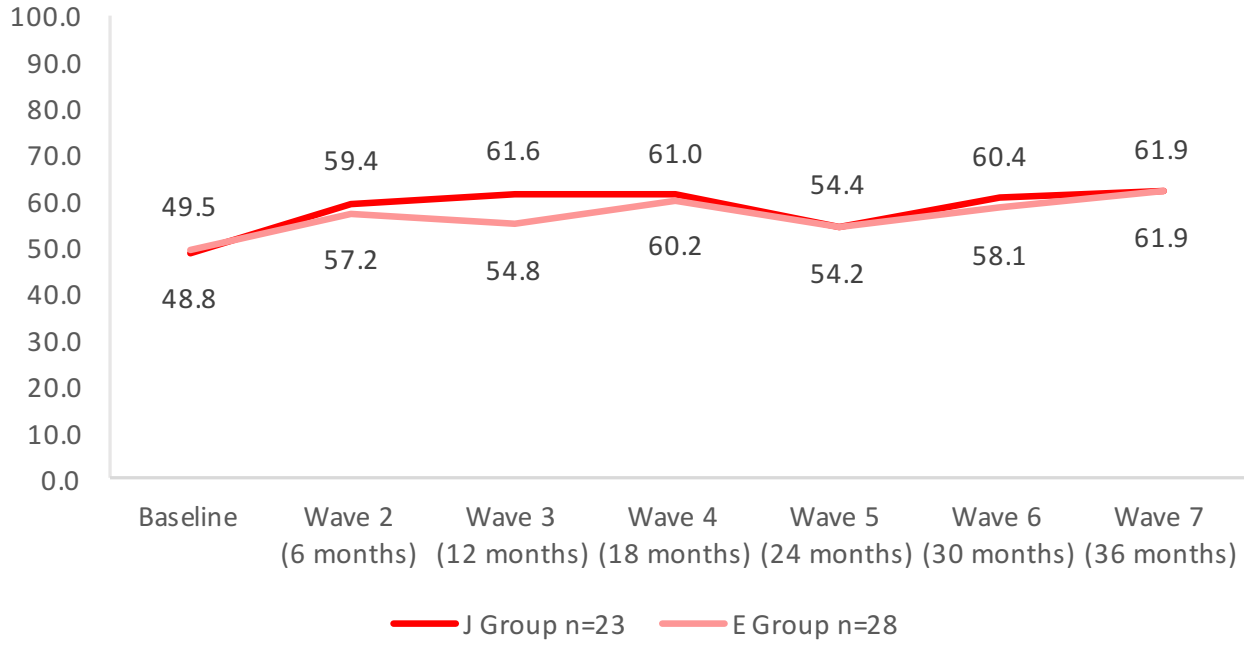
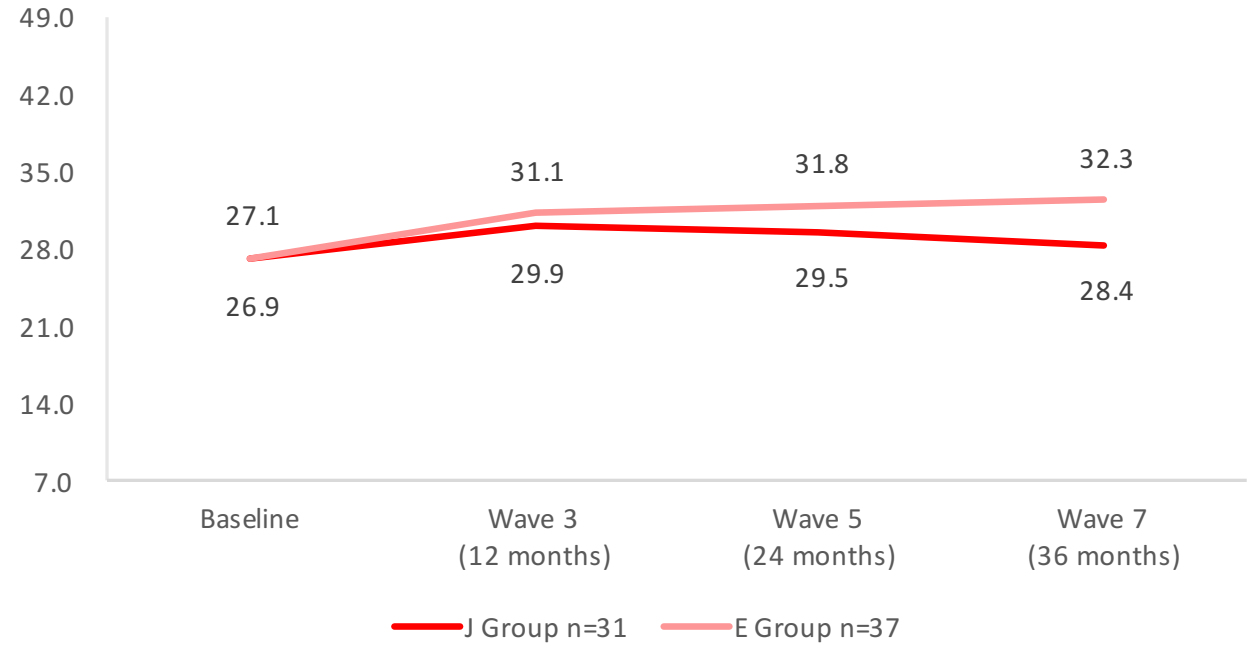


Figure 32 **WHOQOL Environment domain scores, by wave, by randomisation outcome (fully matched sample)**



Drawing on items from the Household Income and Labour Dynamics in Australia Survey (HILDA), the J2SI Pilot Study (Johnson et al. 2014) developed a 7-item social support scale. The J2SI Phase 2 research study has continued use of this scale. Out of a maximum total score of 49, both Js and Es in the matched sample reported a mean social support score of 26.6 at Baseline, and the E and I group recorded a mean social support score of 27.2. At Wave 7, the mean social support score of Js in the matched sample increased marginally to 27.5, and the mean social support score of Es and Es and Is increased by a larger amount, to 32.1 and 32.7, respectively. Analysing the trend in social support scores among the annual matched sample, it is interesting to note that Es report a small, steady increase in their social support scores each year, while the social support scores of Js decrease slightly from Wave 3 to Wave 7 (see Figure 33). This may reflect the transition from intensive case management; while the social support scale instructs participants not to include their relationships with support workers when answering the questions, it may be that the decreased intensity of formal support leads to a negative 'halo effect' where participants feel that their other social supports are lacking.

Figure 33 **Scale of Social Support Score, by year, by randomisation outcome (annual matched sample)**



Satisfaction with social connections and social participation mirrors the outcomes reported, such that Js in the fully matched sample become less satisfied than Es over time. However, although satisfaction with social connections fluctuates between waves, particularly for Js, both Js and Es report slightly higher satisfaction at Wave 7 than they did at Baseline. Among the fully matched sample, Js report a mean satisfaction with social connections of 2.8 out of 5 at Baseline and 3.1 out of 5 at Wave 7, while Es report mean satisfaction of 2.7 at Baseline and 3.3 at Wave 7. With respect to social participation, Js in the fully matched sample reported mean satisfaction of 2.9 out of 5 at both Baseline and Wave 7, with satisfaction dropping to its lowest of 2.5 at Wave 6. Es report their lowest satisfaction with social participation (2.7) at Baseline, and their highest at Wave 3 (3.3), finishing in the middle at 3.0 at Wave 7. In the fully matched sample, satisfaction among Js with the support received from J2SI for social participation fluctuates from a minimum of 3.4 at Waves 2, 3, and 6, to a maximum of 3.8 in Waves 4 and 5. Figure 34 and Figure 35 depict the satisfaction of the fully matched sample with their social connections and social participation, respectively.

Figure 34 Mean satisfaction with outcomes achieved in social connections and social connections support from J2SI, by wave, by randomisation outcome (fully matched sample)

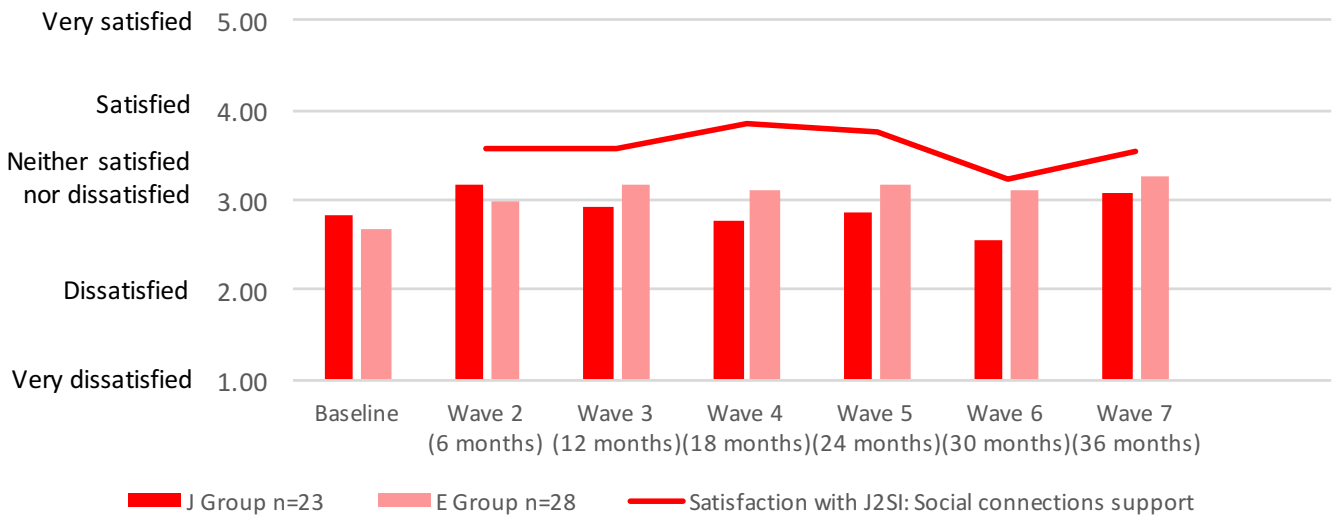


Figure 35 Mean satisfaction with outcomes achieved in social participation and social participation support from J2SI, by wave, by randomisation outcome (fully matched sample)

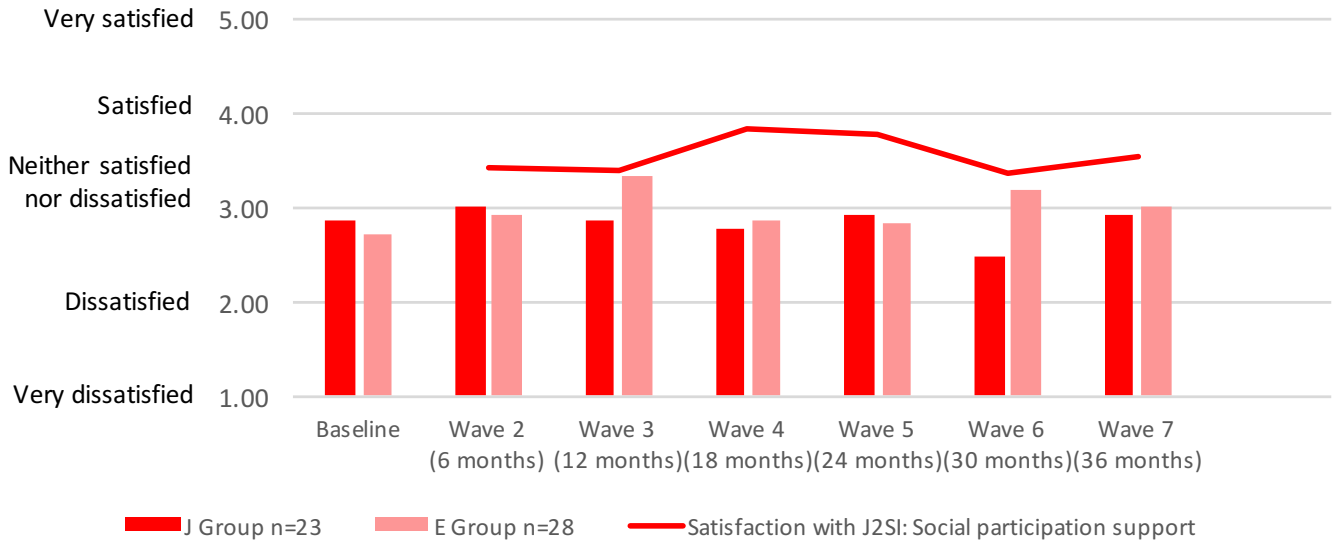
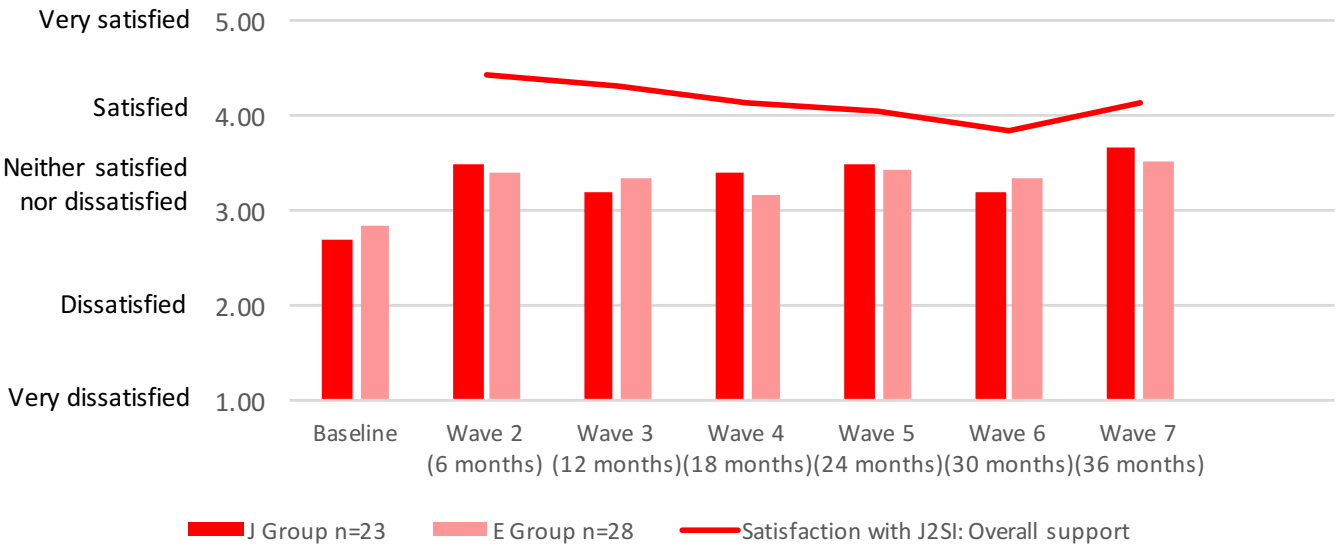


Figure 36 Mean satisfaction with outcomes achieved with overall situation and overall support from J2SI, by wave, by randomisation outcome (fully matched sample)



Satisfaction with outcomes achieved in life overall fluctuate for both Js and Es, reflecting the complexity and impacts of chronic homelessness, even after housing is attained. It is important to note that both groups, and particularly Js report a marked increase in overall satisfaction at Wave 7 relative to Baseline. Among the fully matched sample, Js reported a mean satisfaction with their overall outcomes of 2.7 out of 5 at Baseline and 3.7 at Wave 7, while Es reported a mean satisfaction of 2.8 at Baseline and 3.5 at Wave 7.

Satisfaction with the support received by Js from the J2SI program overall has a general downward trend between Wave 2 and Wave 6, before rising at Wave 7 (though not to Wave 2 levels (see Figure 36). This may reflect participants' adjustment to the decrease in the intensity of support over time, as well as a stabilisation of the optimism and satisfaction arising from the change that the intense initial support likely represented relative to life before J2SI. Similarly, in the qualitative component of the research study (Thielking et al., 2020), while J participants lauded the practical and relational support that the J2SI program provided, dissatisfaction themes centred on the tapering of support at the 18-month time point, and having to adjust to unexpected case manager changeover during the program itself. As mentioned by one participant (J8) at the 36-month timepoint, when the program was winding down for them:

"Well, they changed my case manager and I never really got introduced to another manager and I've just sort of been doing everything by myself."

J2SI Phase 2 Client

Summary

The transition from homelessness to housing can leave those housed with fewer social connections than before. Part of a holistic social inclusion program is to ensure that this does not occur. Hence, we were interested in investigating the extent to which the J2SI Phase 2 program led to higher or lower rates of loneliness and lower social support over time. We are also interested in the extent to which participants experienced an overall increase in their quality of life over the period of the study.

Loneliness, measured using the UCLA 3-item loneliness scale, actually decreased slightly between Baseline and Wave 7 among both Js and Es in the matched sample. In line with this, Social support outcomes increased slightly for both Js and Es between Baseline and Wave 7.

Scores in the physical health, psychological, and environment domains on the World Health Organisation Quality of Life – Brief (WHOQOL-BREF) questionnaire also increased for both Js and Es between Baseline and Wave 7.

In terms of satisfaction with social connections and social participation, Js in the fully matched sample remained neither satisfied nor dissatisfied during the term of the study.

11. COST BENEFIT ANALYSIS

This section presents a brief estimate of the costs and benefits of the J2SI Phase 2 program. There are several caveats that must be acknowledged at the outset. First, the costs or cost savings of the J2SI Phase 2 program presented in this section are only those arising from the self-reported health service utilisation and justice system interaction of those randomised into the program. This presents two major limitations: first, the health and justice sectors are not the only areas in which costs arising from homelessness are incurred, nor are they the only sectors where potential savings arising from addressing homelessness may accrue. For instance, reduced use of crisis services, particularly emergency accommodation, is a reasonable expectation following exit from homelessness, and these costs are not accounted for in the present analysis. Therefore, the cost savings and potential benefits of the J2SI Phase 2 program presented in this section are estimates only, and are likely underestimates given that they only include health and justice costs. The second major limitation presented by analysing self-report health and justice service usage data is the self-report nature of the data. While previous studies find strong correlation between findings derived from self-report data and those using linked administrative data (Metraux et al., 2014; Parsell, Petersen, & Culhane, 2016; Wood et al., 2016), it must be acknowledged that self-report data may under- or over-estimate service usage, and therefore costs associated with usage are too only estimates.

In addition, the calculation of costs or cost savings arising from changes in self-reported health and justice service usage over the course of the J2SI Phase 2 program are based on the assumption that the usage reported by participants at Baseline are 'usual' and would have continued at Baseline levels had the program not occurred. Finally, to ensure comparability over time (i.e., that compositional changes to the sample over the survey waves do not disproportionately affect results), only the health and justice use of J group participants in the annual matched sample (those that completed every yearly survey) are analysed. Irrespective of which sample is used, however, there is potential for attrition bias in the results. For instance, those people that were lost to follow up could have very positive outcomes (e.g. stopped participating in the study because they got a house, job, and no longer identified with a study about homelessness), or alternatively, very negative outcomes (e.g. addiction relapse, mental health breakdown). These people would inevitably affect mean service usage figures, however, they are not captured in the analysis. Therefore, the analysis here is not without limitations and must be interpreted with caution. Analysis of linked administrative data of the service usage of all J group participants across a broader range of government and non-government services throughout the program's duration would provide a more robust estimate of costs or cost savings, however, this data is not yet available.

Table 20 outlines the cost of administering the J2SI Phase 2 program over its duration, by expense type. The 2015-16 costs are for the six month period from January to June 2016. Expenses are expressed in nominal dollars.

Table 20 includes information on the number of clients that the J2SI Phase 2 program supported in each financial year of its duration, as well as the cost of the program per client (calculated by dividing the cost by the number of clients in each financial year). As above, costs are in nominal dollars and clients commenced support in January 2016.

In order to enable fair comparison of costs and cost savings over time, dollar values must be converted to a common year. Table 20 presents the cost per client of the J2SI Phase 2 program in 2015-16 dollars. This is achieved by adjusting for the average consumer price index (CPI) of each year for Melbourne. Over the 3.5 years of the J2SI Phase 2 program, the average cost per client per year in nominal dollars was $18,427 ($17,850 in 2015-16 dollars). According to the Productivity Commission's Report on Government Services, the cost per year per client accessing homelessness services in 2015-16 dollars is $2,538, equating to $8,881 over 3.5 years. Note that these costs do not account for the significant increase in funding that the Victorian Government put into additional programs for rough sleepers as well as auxiliary mental health, and alcohol and drug support services during this period, which would have led to an increase in support for E participants in particular.

Table 20 J2SI program costs by expense type, by year

	2015-16	2016-17	2017-18	2018-19	Total
			Expenses (nominal dollars)		
Employee costs - management/admin	47,348	6,772	0	31,925	**86,045**
Employee costs - support workers	497,616	977,456	890,436	639,822	**3,005,330**
Client support, brokerage	34,644	72,991	63,010	9,698	**180,343**
Motor vehicles	18,085	29,716	37,917	18,561	**104,279**
Facilities/office	37,338	31,291	53,908	64,950	**187,487**
Other service related overheads	7,671	9,649	7,856	27,521	**52,697**
Other costs	13,606	85,752	65,356	99,186	**263,900**
Corporate overheads	82,401	14,577	36,453	32,757	**166,188**
Total Expenses	**738,709**	**1,228,204**	**1,154,936**	**924,420**	**4,046,269**
			Cost per client (nominal dollars)		
Number of Clients	73	62	62	58	-
Cost/client	10,119	19,810	18,628	15,938	**64,495**
			Cost per client (2015-2016 dollars)		
Cost/client	10,119	19.442	17,876	15,038	**62,475**

To estimate the costs or cost savings of health and justice system utilisation, this analysis will use the total estimated cost per person (the sum across all service types) of J group participants with respect to health and justice service use. Table 21 presents the total estimated health and justice service costs for J and E group participants in the annual matched sample.

Table 21 Total estimated costs of service utilisation, by service type, 2015-16 dollars, by wave, by randomisation outcome

	Baseline	Wave 3 (12 months)	Wave 5 (24 months)	Wave 7 (36 months)
		J Group		
Total estimated health costs	$31,311	$15,485	$25,853	$14,894
Total estimated justice costs	$1,629	$2,278	$4,911	$3,106
		E Group		
Total estimated health costs	$10,105	$35,249	$22,009	$26,972
Total estimated justice costs	$2,506	$16,679	$1,604	$1,653

To calculate the total cost savings, costs per wave are deducted from Baseline costs to estimate the cost savings (or costs) accrued throughout the program, relative to if costs had continued at Baseline levels.
In this case, the equation is as follows:

$$\text{Estimated cost savings} = \left(\text{Baseline costs} - \text{Wave 3 costs}\right) + \left(\text{Baseline costs} - \text{Wave 5 costs}\right) + \left(\text{Baseline costs} - \text{Wave 7 costs}\right)$$

For health costs, this results in a saving of $37,700 per J group participant (2015-16 dollars) from changes in health service utilisation over the course of the J2SI Phase 2 program.

Using the same equation as above, justice costs for J group participants increase over the course of the J2SI Phase 2 program, to the tune of $5,407 per J group participant.

Therefore, the total cost saving of the J2SI Phase 2 program in terms of self-reported health and justice service use among J group participants between 2015-16 and 2018-19 is $32,293 per J group participant.

Table 21 outlines the costs of the E group's usage of health services and justice system interaction. Using the same equation as above, the cost of the health service utilisation of Es increased by a total of $53,915 over the course of the research study, relative to if health service utilisation had stayed at Baseline levels. Similarly, though to a smaller magnitude, Es' justice costs increased by a total of $12,420 over the course of the research study, relative to if justice system interaction had stayed at Baseline levels. In total, Es' health and justice costs increased by an estimate of $66,335 over the course of the research study.

The final step of this cost-benefit analysis is to calculate a benefit cost ratio, which is achieved by dividing the cost saving per J group participant over the course of the program by the total cost per client (in 2015-16 dollars) over the program. In this case, the resulting benefit cost ratio is 0.52, meaning that for every $1 invested in the J2SI Phase 2 program, $0.52 of benefit was delivered in terms of net reduced health and justice system costs, according to J group participants' self-reported usage over the four years.

Examining the differential change per client in cost of health and justice service access (by subtracting the cost (savings) of Es from the cost (savings) of Js), there is a differential saving of $98,627 over the course of the program/study. The differential cost of treatment (cost of J2SI Phase 2 – cost of treatment as usual), J2SI Phase 2 costs an additional $53,594 per client relative to treatment as usual. In other words, for an additional $53,594 per client, J2SI Phase 2 has delivered a differential saving of $98,627 over the course of the program in health and justice costs, according to the self-report survey data. This is a benefit cost ratio of 1.84:1 (see Table 22).

Summary

Our cost-benefit analysis is based on a comparison of J2SI program costs with health and justice cost savings. Over the 3.5 years of the J2SI Phase 2 program, the average cost per client per year in nominal dollars was $18,427 ($17.850 in 2015-16 dollars) considerably above the costs of standard support. The combined heath and justice cost savings are estimated at $32,293 per J group participant. Taking into account J2SI program costs, it is estimated that for every $1 invested in the J2SI program, $0.52 is returned in health and justice cost savings. In terms of E participants the combined heath and justice cost costs are estimated at $66,335 per E group participant. Taking into account J2SI program costs and the cost of treatment as usual, it is estimated that for every $1 invested in the J2SI program, $1.84 is returned in health and justice cost savings compared to the control group (E group).

Table 22 Total estimated savings of health and justice system interaction, 2015-16 dollars, 3 years, J group and E group

	J group	E group	J group - E group
Total estimated health savings	$37,701	-$53,915	$91,616
Total Estimated justice savings	-$5,408	-$12,420	$7,012
Total estimated savings	$32,293	-$66,335	$98,628
Cost for 3 years	$62,475	$8,881	$53,594
Cost benefit ratio	0.52	-7.47	1.84

12. CONCLUSION

The Journey to Social Inclusion (J2SI) Phase 2 program, administered by Sacred Heart Mission (SHM), sought to provide three years of intensive case management to 65 chronically homeless individuals in Melbourne between 2016 and 2019. With attrition and client choices around engagement, along with client deaths, client numbers fell over time between these years. The overarching and primary aim of the J2SI Phase 2 program was to attain and sustain housing for clients. However, given the holistic, client-centred and trauma-informed approach that the J2SI Phase 2 program took involving intensive case management, referral to specialist services, social inclusion development activities, and employment readiness activities (in line with client goals), it was anticipated that outcomes in a variety of socioeconomic wellbeing domains would be positively affected.

The Centre for Social Impact at The University of Western Australia (CSI UWA) with Swinburne University was commissioned by SHM to evaluate the effectiveness of the J2SI Phase 2 program. To do this, CSI UWA undertook a research study using a randomised control trial design. The study began with a Baseline survey that participants took upon recruitment, after which they were randomised into either the treatment 'J Group', who went on to receive services via the J2SI Phase 2 program, or the control 'E Group', who went on to receive services as usual. Using surveys, qualitative interviews, and linked administrative data, the research study assessed wellbeing across domains of housing, physical health, mental health, substance use, health service utilisation, justice system interaction, economic participation, and social support and quality of life, along with perspectives from clients and case workers through the qualitative data, and government service usage using linked administrative data. This final report primarily presents data from the seven survey waves, examining changes over time both within and between the J group and the E group. Some qualitative analysis and analysis of linked administrative data pertaining to hospital bed days and public housing data is also presented. An analysis of qualitative interview data relating to the J2SI Phase 2 research study is provided in the companion report A Qualitative Study of Sacred Heart Mission's Journey to Social Inclusion (J2SI) Phase 2 Program: Experiences and Perspectives of J2SI Study Participants (Thielking et al. 2020).

The key conclusion of the present study is that in the priority area of housing, the J2SI Phase 2 program achieved very high rates of transition to housing and sustained that housing with high rates of satisfaction in the J2SI Phase 2 program. With the exception of physical health, outcomes across all domains of wellbeing were better at the conclusion of the J2SI Phase 2 program relative to Baseline for J2SI Phase 2 participants. Outside of housing, Es also experienced a generally improved outcome. The generally improved outcome for Es through the study period no doubt reflected in part the significant increase in funding provided by the Victorian Government to homelessness accommodation services and related mental health and alcohol and drug services over the period of the study.

As expected, given the focus of the program on rapid housing, housing is the domain where the greatest difference between Js and Es is evident, reflecting the partnerships developed between Sacred Heart Mission and public and community housing providers. This was in spite of the increase in housing provided by the Victorian Government to house rough sleepers in Melbourne during the course of the study. At Wave 7, the majority (62.2%) of Js, compared with 28.3% of Es, reported residing in permanent housing, defined as public or community housing or private rental accommodation. Nearly half of Js had been stably housed for two years and by comparison, only 16.2% had been stably housed for two years. The housing records of Sacred Heart Mission itself for the J2SI Phase 2 program participants revealed that 87.5% of participants in the program were supported by SHM to move into permanent housing of one kind or another (public housing, community housing, private rental housing) during the course of the study. At the end of the program, 82.5% of those J participants who had not died during the course of the study, were assessed by SHM as being in permanent housing. While direct comparison between the linked administrative data and self-report data is not indicated, due to differences in the samples and the way that administrative versus self-report data are collected, the proportion of Js is higher than the proportion of Es with public tenancies at Wave 7 according to the linked administrative data (35.6% and 14.8%, respectively). In line with the better housing outcomes among Js, Js were more satisfied with their housing than Es at each survey wave, and were generally satisfied with the support received from the J2SI Phase 2 program for housing.

With respect to physical health, a higher proportion of Js rated their health as 'poor' at Wave 7, and a higher proportion felt that their health was 'worse' or 'much worse' than the year prior to survey. Self-rated health status remained fairly stable for Es between Baseline and Wave 7. Regarding mental health, psychological distress (measured on the K10) decreased between Baseline and Wave 7 for both groups. Mean scores on the K10 were comparable between Js and Es at both Baseline and Wave 7, though Es reported a greater decrease in the proportion experiencing very high distress and a greater increase in those experiencing low distress. Depression, anxiety, and stress were measured using the DASS21. Depression scores decreased for both groups, with Js experiencing a slightly more pronounced decrease; anxiety scores improved almost equally for both Js and Es; stress scores decreased for both groups, and slightly more for Js.

Substance misuse was another domain in which substantial improvements were evident, particularly among Js. The ASSIST Total Substance Involvement Score reduced for both Js and Es, with Js reporting lower scores than Es at each annual wave. The number of substances used in the three months prior to survey decreased for both groups (and particularly Js), and the proportion of both Js and Es that had used three or more substances halved for Js (from 42.2% to 16.2%) and decreased for Es (from 42.6% to 36.5%). High risk use of high risk substances, namely opioids and amphetamines, decreased among both Js and Es, such that 5.8% of Es and 2.7% of Js were using each substance at high risk levels at Wave 7.

Economic participation increased among Js, with the proportion of Js in the matched sample in the labour force doubling between Baseline and Wave 7 (from 10.8% to 21.6%), while Es' labour force participation decreased from 30.2% to 22.6%. Notably, while the proportion of each group that were employed did increase between Baseline and Wave 7, the majority of the Js and half of the Es in the matched sample that are participating in the labour force are those that are unemployed. Quality of life increased across a number of measures. Loneliness decreased among both groups, and particularly among Es. Scores on the WHOQOL-BREF improved for both groups on the physical health, environment, and psychological domains; Es improved on the social relations domain while Js' scores remained stable. Scores of Social Support improved marginally for both groups between Baseline and Wave 7.

Health service utilisation, according to the self-report data, varied considerably throughout the research study and between different types of health services. Nights spent as a hospital inpatient increased for Es and decreased for Js in the annual matched sample at Wave 7, relative to Baseline; nights in a mental health facility increased for both Js and Es at the two-year mark of the study, but decreased back to around Baseline levels at Wave 7. Nights in drug and alcohol rehabilitation facilities were higher for Js than Es at both Baseline and Wave 7, though both groups reported fewer nights spent in drug and alcohol rehabilitation facilities at Wave 7 than at Baseline. There are discrepancies in the mean number of hospital nights between the linked administrative data and the self-report data, such that mean nights for Js in the linked administrative data were higher than in the self-report data, while the opposite was true of Es. Once again, administrative and self-report data cannot be fairly compared due to differences in the samples and differences in the way the data is collected and recorded.

Interactions with the justice system varied throughout the study among both groups in the annual matched sample, but ended at roughly the same levels as Baseline. Justice system interaction seemed to peak at Wave 3 for Es in the annual matched sample, with a clear spike in overnight holds, court attendances, and nights in prison seen at this time point. The justice system interaction of Js remained quite stable, though prison nights did increase at Wave 5. Both Js and Es decreased steadily over the course of the study with respect to the number of times they were stopped by police in the street.

Analysing the cost of changes in self-reported health and justice service utilisation among the J group in the annual matched sample, the total cost savings associated with the reduction in overall health service usage amounted to $37,700 (2015-16 dollars) per J group participant over the course of the program, while justice costs increased $5,407 per person. This cost saving is relative to if health service utilisation had remained at Baseline levels. Therefore, total cost savings with respect to health and justice service utilisation over the course of the J2SI Phase 2 program are estimated at $32,293 per J group participant.

Taking this estimated cost saving and dividing it by the cost of administering the J2SI Phase 2 program per client ($62,475 or $17,850 per client per year in 2015-16 dollars), we arrive at a benefit-cost ratio of 0.52. This means that, for every $1 invested in the J2SI program, $0.52 is returned in health and justice cost savings.

Examining the differential change per client in cost of health and justice service access (by subtracting the cost (savings) of Es from the cost (savings) of Js), there is a differential saving of $98,627 over the course of the program/study. The differential cost of treatment (cost of J2SI Phase 2 – cost of treatment as usual), J2SI Phase 2 costs an additional $53,594 per client relative to treatment as usual. In other words, for an additional $53,594 per client, J2SI Phase 2 has delivered a differential saving of $98,627 over the course of the program in health and justice costs, according to the self-report survey data. This is a benefit cost ratio of 1.84:1.

In interpreting the results of the J2SI Phase 2 research study, in particular the low differential impact in domains other than housing and use of the health and justice service systems, there are a number of factors that need to be considered.

First and foremost, is context. The J2SI Phase 2 program aimed to help chronically homeless individuals obtain housing and begin a journey back to mainstream society. Chronic homelessness is complex; by definition it is long-term, persistent, and is strongly correlated with mental health diagnoses, drug and alcohol addiction issues (and often both), as well as trauma (sometimes childhood, sometimes as a precipitator of homelessness, sometimes as a consequence of homelessness, and sometimes all of the above) (Culhane, Metraux, & Hadley, 2002; Padgett, Gulcur & Tsemberis, 2006; Goodman, Saxe, & Harvey, 1991). The notion that there is a silver bullet to universally address chronic homelessness and its attendant issues within a two or three year timeframe, as most evaluations of Housing First programs cover (Ly & Latimer, 2015), is misguided, to say the least.

Therefore, this final report, at three years post J2SI Phase 2 program commencement, depicts only the beginning of Js' journeys back to social inclusion. The results have shown that the journey has not been linear, but has been positive. There are clear areas to target; (lack of) employment and the attendant income impact of non-employment remains a significant issue and a notable piece of the puzzle that will likely need to be found in order to sustain positive outcomes over time. Self-assessed physical health declined, though we are particularly mindful of the role played by very high rates of chronic illness on entry to the program. Indeed, the J2SI Phase 2 program may have acted to increase cognisance around health issues and the deterioration in health outcomes that comes with the chronic health conditions that were prevalent among the study participants at Baseline are likely to have been a major factor behind the decline in self-assessed health outcomes.

Another major contextual issue that needs to be considered in the present report is that so-called 'treatment as usual' did not remain static during the period of the study. There was in fact a major increase in funding to homelessness support services in inner city Melbourne together with increased funding for related services such as mental health and alcohol and other drug support during the period that the J2SI Phase 2 Program was operating as well as an increase in the supply of social housing to support transitions into permanent housing for the chronically homeless.

Another major factor to note in interpreting the J2SI Phase 2 results is the mixed evidence with respect to the impact of Housing First (HF) programs on non-housing outcomes. Substance use has been found by some studies to decrease with enrolment in a Housing First program (Padgett et al. 2011; Tsemberis et al. 2012), while other studies find no difference (Westermeyer & Lee, 2013; Padgett et al. 2006). Similar results are found for justice system interaction; in reviews of HF literature, Leclair et al. (2019) and Ly and Latimer (2015) found that some studies found no difference in justice contacts, or an increase. Ly and Latimer (2015) suggested that participants may have been incarcerated for crimes committed prior to their entry in HF programs, and a longer follow-up period is required to obtain more definite results. Once again, psychological and social wellbeing has been found to increase as a result of increased choice experienced by those with a psychiatric diagnosis in a HF program (Gulcur et al. 2007), but other studies have found no change in these types of outcomes (Tsai et al. 2010). Once again, these mixed results are likely attributable to the short (two or three year) time horizon covered by these studies, such that the journey to positive wellbeing in a broader range of domains is long-term and non-linear.

The companion report to this study (Thielking et al. 2020) presents finding from perspectives of 18 individuals who were involved in the qualitative component of the Phase 2 J2SI research study highlighting the strengths and limitations of the J2SI Phase 2 model of service delivery and offers six major recommendations for future refinement and implementation of the J2SI program.
The Journey to Social Inclusion Phase 3 program has now commenced, funded by a Social Impact Investment. The research team continues to provide analysis and advice to facilitate evaluation of its effectiveness. An eighth wave of the J2SI Phase 2 research study survey is presently underway for research purposes, which will perhaps allow us to begin to examine the hypothesis that positive outcomes will emerge over a longer period of time.

"If you get a chance to deal with them (J2SI), do it. They do nothing but help you. They don't criticise, they don't look down their nose. They're just there to help. That's what I like." – J2SI Phase 2 client 36-month qualitative interview (Thielking et al., 2020).

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