



HHS Public Access

Author manuscript

Obesity (Silver Spring). Author manuscript; available in PMC 2016 February 01.

Published in final edited form as:

Obesity (Silver Spring). 2015 February ; 23(2): 282–285. doi:10.1002/oby.20981.

Willingness to Pay for Continued Delivery of a Lifestyle-Based Weight Loss Program: the Hopkins POWER Trial

Gerald J Jerome, Ph.D.^{1,2}, Reza Alavi, M.D., M.H.S., M.B.A.², Gail L Daumit, M.D. M.H.S.^{2,3}, Nae-Yuh Wang, Ph.D.^{2,3}, Nowella Durkin², Hsin-Chieh Yeh, Ph.D.^{2,3}, Jeanne M Clark, M.D. M.P.H.^{2,3}, Arlene Dalcin, R.D.², Janelle W Coughlin, Ph.D.⁴, Jeanne Charleston, R.N.^{2,3}, Thomas A Louis, Ph.D.⁵, and Lawrence J Appel, M.D. M.P.H.^{2,3}

¹Department of Kinesiology, Towson University, Towson, Maryland ²Division of General Internal Medicine, Johns Hopkins University School of Medicine, Baltimore, Maryland ³Welch Center for Prevention, Epidemiology, and Clinical Research, Johns Hopkins University ⁴Department of Psychiatry and Behavioral Sciences, Johns Hopkins University School of Medicine, Baltimore, Maryland ⁵Department of Biostatistics, Johns Hopkins Bloomberg School of Public Health, Baltimore, Maryland

Abstract

Background—In behavioral studies of weight loss programs, participants typically receive interventions free of charge. Understanding an individuals' willingness to pay for weight loss programs could be helpful when evaluating potential funding models.

Objective—To assess willingness to pay for the continuation of a weight loss program at the end of a weight loss study.

Methods—We assessed willingness to pay for the continuation of a weight loss program with monthly coaching contacts at the end of the two year Hopkins POWER trial. Interview administered questionnaires determined the amount participants were willing to pay for continued intervention. Estimated maximum payment was calculated among those willing to pay and was based on quantile regression adjusted for age, body mass index, race, sex, household income, treatment condition, and weight change at 24 months.

Users may view, print, copy, and download text and data-mine the content in such documents, for the purposes of academic research, subject always to the full Conditions of use:http://www.nature.com/authors/editorial_policies/license.html#terms

Conflicts of Interest

Healthways, Inc. developed the intervention website used in the POWER trial in collaboration with Johns Hopkins investigators and provided coaching effort for the remotely delivered intervention. Healthways also provided some research funding to supplement NIH support. Under an institutional consulting agreement with Healthways, the Johns Hopkins University received fees for advisory services to Healthways during the POWER trial. Faculty members who participated in the consulting services received a portion of the university fees.

On the basis of POWER trial results, Healthways developed and is commercializing a weight-loss intervention program called *Innergy*.tm Under an agreement with Healthways, Johns Hopkins faculty monitor the *Innergy* program's content and process (staffing, training, and counseling) and outcomes (engagement and weight loss) to ensure consistency with the corresponding arm of the POWER Trial. Johns Hopkins receives fees for these services and faculty members who participate in the consulting services receive a portion of these fees. Johns Hopkins receives royalty on sales of the *Innergy* program.

No other potential conflict of interest relevant to this article was reported.

Results—Among the participants (N=234), 95% were willing to pay for continued weight loss intervention; the adjusted median payment was \$45 per month. Blacks had a higher adjusted median willingness to pay (\$65/month) compared to Non-Blacks (\$45/month), $p=.021$.

Conclusions—A majority of participants were willing to pay for a continued weight loss intervention with a median monthly amount that was similar to the cost of commercial weight loss programs.

Keywords

Willingness to Pay; Obesity; Weight Loss

Introduction

In behavioral studies of weight loss programs, participants typically receive interventions free of charge. Understanding individual's willingness to pay can be helpful when evaluating funding models that include member contributions. Few studies have examined willingness to pay (WTP) for obesity treatment. Three reports were surveys of the general population and included references to hypothetical treatments.¹⁻³ Another study surveyed those in a ten-year bariatric surgery study and referenced an unspecified treatment that would address their weight problems.⁴

One of the only studies to determine WTP among individuals currently in a lifestyle-based weight loss program found participants were willing to pay \$1324 (Canadian, 2004) for a hypothetical three month lifestyle based weight loss program that included physician counseling every 2 weeks.⁵ WTP was lower (\$787 Canadian) for a hypothetical program that included group meetings but no physician involvement. Roux and colleagues noted that the hypothetical program with physician involvement, although preferred, was unrealistic and that the other program with group counseling more closely matched services currently available in the community.⁵

In the current study, we report WTP for a continued weight loss program at the end of a 24 month study among participants who were randomized to the active intervention groups in the Hopkins POWER trial, a three-arm randomized weight loss trial that enrolled a demographically heterogeneous study population.^{6,7} The study also examined differences in WTP among demographic groups and groups based on 24 month weight change.

Methods

Overview

The POWER trial at Hopkins was a randomized trial examining the effectiveness of two lifestyle-based weight loss interventions (n=277) compared to a control group (n=138) among obese adult patients at six primary care practices.^{6,7} Participants were 22 years of age, body mass index (BMI) ≥ 30 kg/m², with additional cardiovascular risk factor(s). WTP for continued lifestyle programming was assessed at month 24 follow-up among participants in both active intervention arms. An institutional review board approved the study, and all

participants provided written informed consent. Study details have been published.^{6,7} A brief description follows.

Intervention Summary

Participants assigned to the two lifestyle interventions with a 5% weight loss goal and access to a study website that included learning modules and tools for self-monitoring weight, caloric intake, and exercise. During the first six months, the Remote Support Only (RSO) participants were offered 15 coaching calls and the In-Person Support (IPS) participants were offered 21 group sessions and nine individual coaching sessions (in-person or by telephone). From months 7-24, RSO participants were offered monthly calls and IPS participants were offered both individual and group sessions monthly.

Trial Primary Outcome

As previously reported, at 24 month the control arm loss -0.8 kg, RSO loss -4.6 kg ($P < 0.001$ compared to control), and IPS loss -5.1 kg ($P < 0.001$ compared to control) with no significant difference between RSO and IPS.⁶ At month 24, 40% of the intervention participants ($n=105$) achieved 5% weight loss. At month 24, 40% of the intervention participants ($n=105$) achieved 5% weight loss.

Willingness to Pay Measures

Participants were asked by an interviewer, if their weight loss program could have continued with monthly coaching contact, would they be willing to pay in order to remain in the program? If a participant indicated a WTP, then they were asked if they were willing to pay various amounts (\$10/month; \$20/month; \$40/month; \$65/month and \$100/month) until a maximum amount was identified. Three algorithms were implemented in an alternating sequence. The low algorithm started with \$10/month then inquired about the next higher amount; the middle algorithm started with \$40/month and worked in an ascending or descending order based on participant response; and the high algorithm started with \$100/month then inquired about lesser amounts.

Analyses

Among those willing to pay for the service (i.e. willingness to pay $> \$0$), quartiles (Q1, Q2, Q3) for the maximum amount willing to pay were reported in US dollars per month. Estimated maximum payment (\$/month) quartiles (Q1, Q2, Q3) were based on quantile regression and adjusted for each of the following categorical variables: age (< 55 and ≥ 55 years); BMI (< 35 and ≥ 35 kg/m²); race (black and non-black); sex (female and male); household income ($< \$50,000$; $\$50,000$ - $\$99,999$; and $\geq \$100,000$); treatment condition (RSO and IPS); weight change at 24 months (\geq baseline weight; $< 5\%$ weight loss; $\geq 5\%$ weight loss); and initial cost presented (low initial cost, middle initial cost, high initial cost).

Results

Among the 277 participants in the active intervention groups, 13 were missing weight data, and an additional 31 were missing WTP data. Hence, 234 participants were included in these analyses. Among those who indicated a WTP ($n=223$) 46% were younger than 55 years of

age, 50% had a BMI below 35 kg/m² at baseline, 39% were Black, and 61% were female. Table 1 reports the crude median amount participants were willing to pay (median=40) and [Q1=20, Q3=100].

The adjusted medians [Q1, Q3] were calculated using a single quantile regression analyses that included all categorical variables listed and the percentiles reported are adjusted for all variables in the model. The overall adjusted median was \$45 per month. There was a statistically significant difference between the median_{adj} WTP of Blacks (\$65/month) and Non-Blacks (\$45/month), $p=.021$.

The order in which response options were presented was also associated with WTP; those presented with the lowest amount first (i.e. \$10/month) had a lower adjusted median payment (\$25/month) compared to those who were presented with the highest value first (i.e. \$100/month) who had a median of \$45/month, $p=.002$. Neither weight loss, nor income was associated with WTP ($p>.05$). Figure 1 displays the frequency of WTP responses, stratified by the initial level of payment presented to the participant. The algorithm that started with the low amount had the highest frequency of response in the \$20/month category (>30%) and the algorithm that started with the high amount had the highest frequency of responses in the \$100/month category (>30%).

Discussion

This is one of the first reports on WTP for a specified weight loss program after individuals had participated in the program. In the current study there was strong interest in a sustained intervention with 95% of participants willing to pay for weight loss program continuation, with an adjusted median WTP was \$45 per month. Black participants were willing to pay more (\$65/month) than non-blacks. Unlike other studies that found income was associated with WTP, income was not associated with WTP in the current study.²⁻⁴ Interestingly, weight loss success in the two year program was not associated with WTP for further services. This suggests that even those who were not successful with their weight goal found value in the program. Perhaps some participants had personal goals for smaller relative losses or preventing weight gain.

Willingness to pay in this study was lower than the amounts reported in previous studies (e.g. \$100-\$262 per month) which reference hypothetical treatments.^{2,4,5} It is not clear if the differences in WTP were associated with presentation of a hypothetical program versus payment for a real program well known to participants, or if the characteristics of the participants were different. It is noteworthy that the median WTP in our study is similar to advertised prices for commercial programs (e.g. Weight Watchers online, \$42.95/month).⁹ Our results were also similar to the WTP for continued lifestyle-based diabetes risk-reduction program (~\$42/month) among those who participated in a diabetes reduction intervention study.⁸ The latter study was similar as it evaluated WTP for a specific lifestyle program at the end of a study among participants who had been enrolled in the program.

One factor that was associated with WTP was the order in which responses were presented. Those presented with the lowest cost first had the lowest median monthly amount. Although

there has been significant discussion regarding how to ask WTP questions, perhaps the most innovative approach is actually offer a program at a given fee to determine who enrolls.⁵

We inquired about WTP for monthly coaching and do not know the WTP for more frequent coaching contact found in the intensive phase of the program. Although there may have been a ceiling effect associated with the maximum survey response (\$100), a few high responses would have a minor effect on these results given the use of medians in the analyses.

Moreover, the association among income and WTP may differ in samples that include more low income participants. It should also be noted that missingness in weight loss studies is likely to be informative. If missing values were replaced with “unwilling to pay”, then 80% of participants were willing to pay for continued services. Strengths of the study include a population appropriate for a weight loss program, reference to an existing weight loss program, and a diverse population.

In summary, the vast majority of participants who completed a weight loss intervention were willing to pay for continuation of the program, with a median monthly amount that was similar to the cost of a commercial weight loss program.

Acknowledgments

All authors were involved in writing the paper and had final approval of the published version.

Supported by a grant from the National Heart, Lung, and Blood Institute (HL087085) and Healthways Inc.

References

1. Doyle S, Lloyd A, Birt J, et al. Willingness to pay for obesity pharmacotherapy. *Obesity (Silver Spring)*. 2012; 20(10):2019–2026. [PubMed: 22301901]
2. Fu TT, Lin YM, Huang CL. Willingness to pay for obesity prevention. *Econ Hum Biol*. 2011; 9(3): 316–324. [PubMed: 21497145]
3. Liu JT, Tsou MW, Hammitt JK. Willingness to pay for weight-control treatment. *Health Policy*. 2009; 91(2):211–218. [PubMed: 19167128]
4. Narbro K, Sjostrom L. Willingness to pay for obesity treatment. *Int J Technol Assess Health Care*. 2000; 16(1):50–59. [PubMed: 10815353]
5. Roux L, Ubach C, Donaldson C, Ryan M. Valuing the benefits of weight loss programs: An application of the discrete choice experiment. *Obes Res*. 2004; 12(8):1342–1351. [PubMed: 15340118]
6. Appel LJ, Clark JM, Yeh HC, et al. Comparative effectiveness of weight-loss interventions in clinical practice. *N Engl J Med*. 2011; 365(21):1959–1968. [PubMed: 22085317]
7. Jerome GJ, Yeh H, Dalcin A, et al. Treatment of obesity in primary care practice: The practice based opportunities for weight reduction (POWER) trial at Johns Hopkins. *Obesity and Weight Management*. 2009; 5(5):216–221.
8. Johnson FR, Manjunath R, Mansfield CA, Clayton LJ, Hoerger TJ, Zhang P. High-risk individuals' willingness to pay for diabetes risk-reduction programs. *Diabetes Care*. 2006; 29(6):1351–1356. [PubMed: 16732020]
9. Weight Watchers. [2014-06-02] 2014. <http://www.weightwatchers.com/monthlypass/> Archived at <http://www.webcitation.org/6Q2GJSTIJ>

What is already known?

Willingness to pay is an important factor in member supported weight loss programs.

Most literature on willingness to pay for weight loss programs has focused on hypothetical weight loss programs.

Little is known about participants willing to pay for continued weight loss program following a lifestyle intervention.

What does this study add?

95% of the participants were willing to pay for continued programming

Willingness to pay was not associated with weight loss success.

Willingness to pay was not associated with income, but was associated with the low, medium or high cost starting point of the survey algorithm.

Willingness to pay was associated with race.

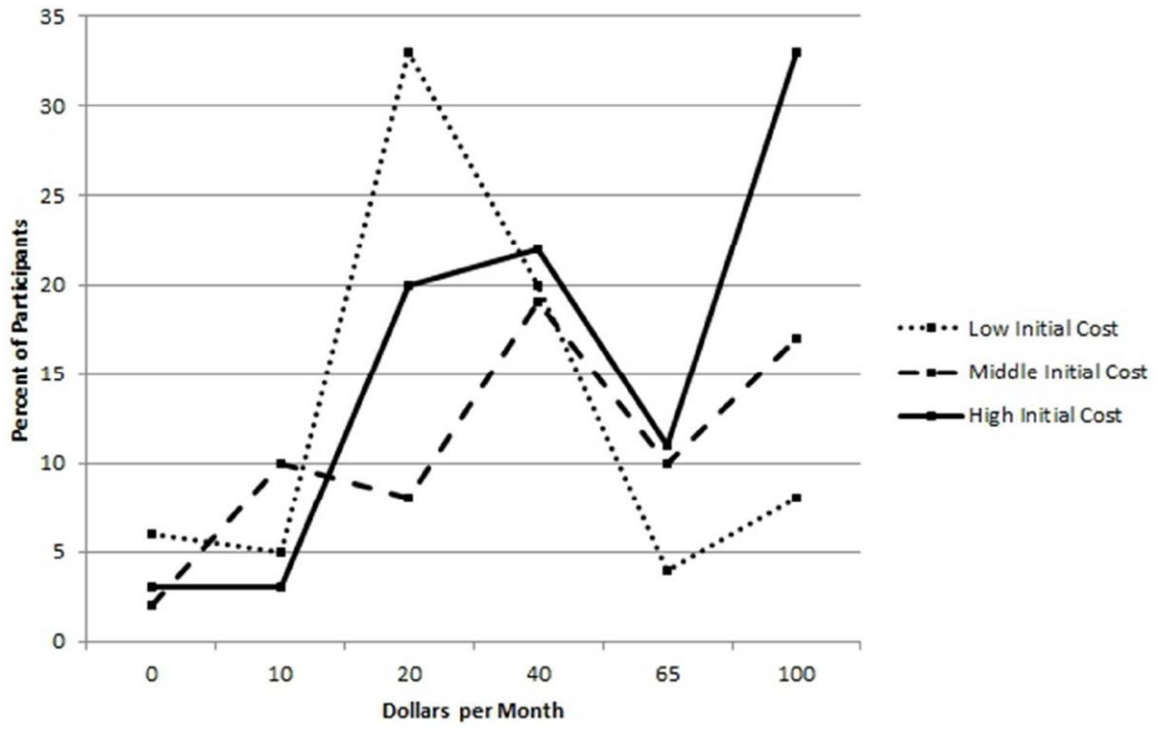


Figure 1. Willingness to Pay for Continued Delivery of a Lifestyle-based Weight Loss Program by Order of the Initial Cost Option.

Willingness to Pay for Continued Lifestyle-Based Weight Loss Program by Demographic, Treatment Condition and Weight Change Categories

Table 1

Characteristics	Not Willing to Pay n(%)		n(%)	Willing to Pay Amount Willing to Pay (\$/month)		p
	Crude Median	Adjusted Median		Crude Median	Adjusted Median	
Total	11(5)	45[28,83]	223(95)	40[20,100]	45[28,83]	
Age (years)						
< 55	4(36)	40[20,100]	102(46)	40[20,100]	50[34,83]	.371
55	7(64)	40[20, 65]	121(54)	40[20, 65]	45[28,83]	Ref
Baseline BMI (kg/m ²)						
BMI < 35	8(73)	40[20,100]	110(49)	40[20,100]	50[28,91]	.385
BMI ≥ 35	3(27)	40[20, 65]	113(51)	40[20, 65]	45[28,83]	Ref
Race						
Black	2(18)	40[20,100]	88(39)	40[20,100]	65[34,100]	.021
Non-Black	9(82)	40[20, 65]	135(61)	40[20, 65]	45[28,83]	Ref
Sex						
Female	10(91)	40[20,100]	135(61)	40[20,100]	40[28,83]	.433
Male	1(9)	40[20,100]	88(39)	40[20,100]	45[28,83]	Ref
Household Income (annual)						
< \$50,000	1(9)	40[20, 65]	48(22)	40[20, 65]	30[18,74]	.107
\$50,000-99,999	5(45)	40[20,100]	81(36)	40[20,100]	45[22,83]	.136
\$100,000	5(45)	40[20, 65]	94(42)	40[20, 65]	45[28,83]	Ref
Treatment Condition						
Remote Support Only	5(45)	40[20,100]	115(52)	40[20,100]	35[22,74]	.111
In-Person Support	6(55)	40[20,100]	108(48)	40[20,100]	45[28,83]	Ref
Weight Change (24 months)						
baseline weight	3(27)	40[20, 65]	51(23)	40[20, 65]	45[28,83]	Ref
< 5% weight loss	5(45)	40[20,100]	73(33)	40[20,100]	55[38,74]	.268
5% weight loss	3(27)	40[20,100]	98(44)	40[20,100]	55[32,83]	.210
Order						
Low First	6(55)	20[20,40]	70(31)	20[20,40]	25[16,40]	.002
Middle First	2(18)	40[20,100]	64(29)	40[20,100]	45[26,74]	1.00

Characteristics	Willing to Pay Amount Willing to Pay (\$/month)		P
	Not Willing to Pay n(%)	Adjusted Median Median [Q1, Q3]	
High First	3(27)	40[20,100]	45[28,83] Ref

Note: Estimates are adjusted for all variables listed. P values indicated within group differences in adjusted medians for each characteristic. Ref indicates reference for within group test.