

Gauging Progress toward a Healthier IU: Focus on IU South Bend

A Comparison of the IU Workplace Health and Wellness Survey Results from 2013 and 2015

1 INTRODUCTION

In 2013, Indiana University implemented the first university-wide survey of employee health and wellness. In support of building a culture of health and wellness across all campus locations, the aims of the IU Workplace Health & Wellness Survey were to:

- 1) establish baseline measures of workplace health to gauge the impact of the Healthy IU initiative over time;
- 2) understand how well IU workplaces are supporting the health of employees;
- 3) identify health advantages and challenges of this university community;
- 4) identify opportunities for change that are actionable from an organizational standpoint.

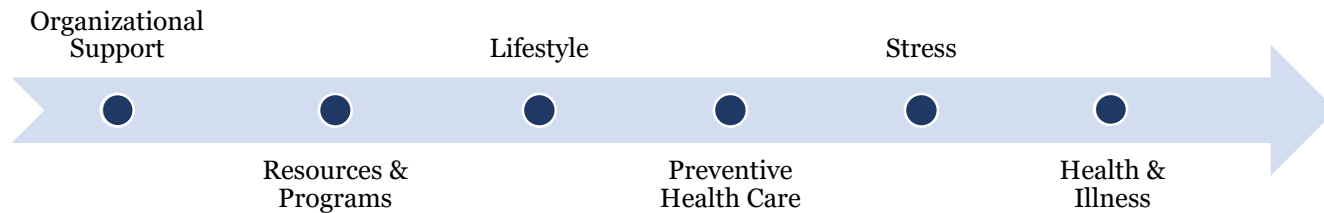
In 2015, the survey was repeated. This report focuses on the first aim, as we systematically compare 2013 IU South Bend survey results with 2015 results to assess our progress toward a healthier IU.

2 METHODS

2.1 SURVEY CONTENT

The wording of most questions in the 2015 survey remained consistent with 2013 wording, enabling valid year-to-year comparisons. Some questions were modified, deleted, or added to improve the value of information for organizational planning. Please note in the tables that follow, “NA” identifies questions that were Not Asked or Not Asked in a comparable way in both years.

The survey’s main content areas are shown on the diagram below along a continuum of change. Moving from left to right along the continuum, the difficulty and time required for change increases. Areas further to the left represent the greatest potential for rapid change when organizational interventions are implemented; right-most areas are anticipated to take far longer to reflect change. We will consider the changes observed at IUSB between 2013 and 2015 in the context of this continuum.





2.2 COMPARATIVE ANALYSIS & INTERPRETATION

A total of 155 IUSB employees responded to our survey, yielding a 27.1% response rate. Quantitative data were analyzed using IBM SPSS Statistics 23.0 (IBM Corp., 2015). For valid comparison, survey data for both survey years (2013 and 2015) were weighted to the 2013 employee population using two weighting variables: sex (female or male) and job type (faculty or staff). Respondent demographics compared to the employee population overall are shown in the table below. There is consistency in the demographic characteristics of respondents in 2015 compared to 2013. In both years, the proportion of females and faculty who responded was higher than their corresponding proportion of full-time employees overall. The weighting process compensates for such differences.

Demographics	2013		2015	
	Respondents	Full-Time Employees*	Respondents	Full-Time Employees
Sex				
Female	78%	54%	72%	50%
Male	22%	46%	28%	50%
Job Type				
Staff	59%	68%	61%	67%
Faculty	41%	32%	39%	33%

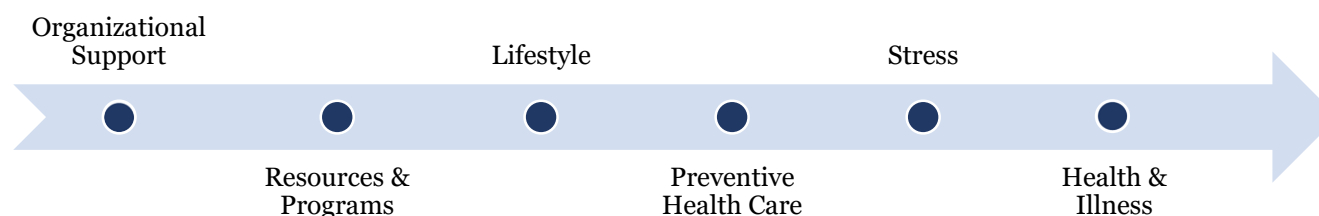
**2013 Full-Time Employee proportions have been corrected since originally reported*

For each question being compared, we calculated and considered two measures of change, described and explained in the table below: 1) absolute change, and 2) relative change. Further, we considered both the statistical and practical significance of these changes in the rates. Chi-square testing was conducted to assess whether the absolute difference in rates was *statistically significant*. However, given the large number of respondents to our survey (4,314), differences may be statistically significant though not practically meaningful, so criteria were set for both statistical and practical significance. The benchmark set for practical significance was $\geq 10\%$ relative change, either better or worse.

	Absolute Change	Relative Change
Meaning	The simple difference between the two rates being compared	Expresses the change <i>relative</i> to the starting point; allows us to compare the degree of change across factors that vary widely in prevalence
Calculation	= 2015 Rate - 2013 Rate	= $\frac{(2015 \text{ Rate} - 2013 \text{ Rate})}{2013 \text{ Rate}}$
Example 1: Employees told they have pre-diabetes or borderline diabetes	= 7.5% - 5.6% = 1.9% A small absolute change but... 	= $\frac{(7.5\% - 5.6\%)}{5.6\%} = \frac{1.9\%}{5.6\%}$ = 33.9% A large relative change
Example 2: Employees who participated in some physical activities or exercises...in the past month	= 87.9% - 83.9% = 4.1% A larger absolute change than in example 1 but... 	= $\frac{(87.9\% - 83.9\%)}{83.9\%} = \frac{4.1\%}{83.9\%}$ = 4.9% A much smaller relative change
Significance of Differences	Statistical significance evaluated at $\alpha=0.05$ using Chi-square testing	Practical significance if $\geq \pm 10\%$ relative change

3 COMPARATIVE RESULTS


The IUSB comparisons between 2015 and 2013 IU Workplace Health & Wellness Survey results are presented in this section, primarily in the form of tables. Each section focuses on a content area, proceeding from left to right along the continuum of change.



In comparing the survey measures comprehensively, we color-coded our interpretations based on the combination of statistical and practical significance. The color-coding is intended to provide a quick visual impression of the strength and degree of change observed in each content area.

	Improvement is statistically and practically significant
	Worsening is statistically and practically significant
	Change lacks statistical and/or practical significance

Also, the tables reflect whether or not there were interventions being implemented at IUSB that focused on that aspect of workplace health in the two-year period. Such interventions were provided by a variety of groups, and information regarding these interventions was provided to the survey team by Healthy IU. Emblems distinguish between two levels of intervention:

 Face-to-face intervention provided

 Communication only provided

3.1 ORGANIZATIONAL SUPPORT

TABLE 1. ORGANIZATIONAL SUPPORT	COMPARISON						
	2013	2015	Absolute Change	Relative Change	p-value	Change Code	Intervention Provided
Q10. Overall, how supportive is IU of your personal health? (Percent rating 7-10 on scale of 1-10)	59.9%	63.9%	4.0%	6.7%	0.129		▲
Q9. Overall, how safe do you think your workplace is? (Percent rating 7-10 on scale of 1-10)	80.2%	77.6%	-2.6%	-3.2%	0.242		
Q20. All in all, how satisfied would you say you are with your job? (Percent satisfied/very satisfied)	85.2%	82.9%	-2.3%	-2.7%	0.280		
Q11. Employees who Agree or Strongly Agree...							
The people you work with take a personal interest in you.	NA	70.6%					
In your workplace, your co-workers support your efforts to be healthy.	61.5%	61.8%	0.3%	0.5%	0.899		▲
Your supervisor is concerned about the welfare of those under him or her.	NA	75.3%					
In your workplace, management considers workplace health and safety to be important.	56.8%	61.8%	5.0%	8.8%	0.062		
IU has provided you with the opportunity to be physically active .	51.8%	68.0%	16.2%	31.3%	<0.001*		▲
IU has provided you with the opportunity to eat a healthy diet .	32.4%	30.5%	-1.9%	-5.9%	0.457		
IU has provided you with the opportunity to live tobacco free .	87.1%	87.0%	-0.1%	-0.1%	0.939		▲
IU has provided you with the opportunity to manage your stress .	23.8%	45.0%	21.2%	89.1%	<0.001*		Ψ
IU has provided you with the opportunity to work safely .	66.6%	68.7%	2.1%	3.2%	0.383		

*Statistically significant; NA = not asked/not comparably asked in given year

The content area of Organizational Support showed statistically and practically significant improvements in two measures (green). The greatest relative improvement (89.1% increase over 2013) was in the percentage of employees who say that IU has provided them with the opportunity to manage their stress. Levels of stress reported by employees in the initial 2013 survey were a top concern University-wide, and subsequent efforts were focused on improving this area of wellness. There was also a 31.3% increase over 2013 in the percentage of employees who say that IU has provided them with the opportunity to be physically active. Remaining measures did not change substantially per our criteria.

3.2 RESOURCES & PROGRAMS

TABLE 2. Q12: Are the following PROGRAMS OR RESOURCES currently available at your workplace? (Percent who said yes)	COMPARISON						
	2013	2015	Absolute Change	Relative Change	p-value	Change Code	Intervention Provided
Access to clean drinkable water	NA	85.1%					
Opportunities to buy fresh fruits and vegetables	50.1%	34.9%	-15.2%	-30.3%	<0.001*		
Healthy food options in vending machines	16.5%	19.5%	3.0%	18.2%	0.164		
Healthy food options to purchase in the cafeteria or other food service	66.1%	47.2%	-18.9%	-28.6%	<0.001*		Ψ
1-on-1 nutritional counseling	NA	44.8%					Ψ
Stress management or stress reduction classes/programs	15.9%	35.9%	20.0%	125.8%	<0.001*		
A convenient place to work out or exercise (2015) - A place to work out or exercise such as an onsite exercise room (2013) †	80.2%	79.1%	-1.1%	-1.4%	0.580		Ψ
A place to bike or walk	88.5%	91.6%	3.1%	3.5%	0.056		Ψ
A walking program	28.4%	69.9%	41.5%	146.1%	<0.001*		Ψ
Ergonomics (work station or computer setup, proper lifting, etc.)	25.7%	24.8%	-0.9%	-3.5%	0.705		
Flu shots at work	93.3%	86.1%	-7.2%	-7.7%	<0.001*		▲
Employee Assistance Program (access to professional counseling)	48.4%	66.2%	17.8%	36.8%	<0.001*		Ψ
Programs to help people stop smoking (of current smokers)	30.8%	100.0%	69.2%	224.7%	<0.001*		▲
Healthy weight/weight loss programs	37.3%	43.7%	6.4%	17.2%	0.019*		
Blood pressure monitoring device available for self assessment	8.2%	44.9%	36.7%	447.6%	<0.001*		Ψ
A true smoke-free workplace	91.7%	81.3%	-10.4%	-11.3%	<0.001*		▲
A private area/lactation room for moms who are breast-feeding (of women aged 18-44)	17.8%	42.0%	24.2%	136.0%	<0.001*		▲
Signs that encourage stair use	19.6%	12.5%	-7.1%	-36.2%	<0.001*		▲
Markers that identify walking trails	NA	17.3%					
Easy to access maps of walking trails	NA	15.4%					Ψ
A designated person who communicates health and wellness information to your work group	NA	23.6%					▲

*Statistically significant; NA = not asked/not comparably asked in given year

Improving employee awareness and access to health-supporting Resources & Programs at their IU workplace was identified in 2013 as an opportunity for rapid change and organizational action. The numerous intervention emblems shown in the final column of this table reflect the broad action taken in this

area. Healthy change is clearly evidenced in the broad improvements seen in 7 of the measures in Table 3.1 above – improvements that are both statistically and practically significant. In fact, relative increases of over 100% were measured for blood pressure self-monitoring devices, smoking cessation programs, walking programs, availability of lactation rooms, and stress management programs. Four areas did see a significant worsening: presence of signs that encourage stair use, opportunities to buy fresh fruits and vegetables, availability of healthy options in the cafeteria or other food service, and the percentage of employees with access to “a true smoke-free workplace.” The remaining 5 measures did not change substantially per our criteria.

3.3 LIFESTYLE

TABLE 3. LIFESTYLE INFLUENCES ON HEALTH	COMPARISON						
	2013	2015	Absolute Change	Relative Change	<i>p-value</i>	Change Code	Intervention Provided
Q22. Employees getting enough restful sleep to function well in job and personal life - always/most of the time	59.9%	55.7%	-4.2%	-7.0%	0.137		Ψ
Q64 & Q65. Employees whose BMI falls within normal range (18.5-24.9)	45.1%	35.1%	-10.0%	-22.2%	<0.001*		Ψ
Q23. Employees who do not smoke cigarettes	96.6%	95.2%	-1.4%	-1.4%	0.247		▲
Q24. Current smokers who stopped smoking for one day or longer because they were trying to quit	44.1%	76.0%	31.9%	72.3%	0.019*		
Q25. Employees who participated in some physical activities or exercises...during the past month	90.4%	86.4%	-4.0%	-4.4%	0.032*		Ψ
Q26 and 27. Employees meeting the aerobic physical activity guidelines	68.0%	58.4%	-9.6%	-14.1%	<0.001*		
Q28. Employees meeting the strength-training guidelines	54.0%	48.4%	-5.6%	-10.4%	0.049*		
Q26-28. Employees meeting both aerobic and strength-training guidelines	47.0%	39.6%	-7.4%	-15.7%	0.010*		
Q33. (Of those who mostly sit on the job) Employees who are able to get up and move around 8 or more times during a usual 8 hour work day	50.4%	59.6%	9.2%	18.3%	0.002*		Ψ
Q18. Employees who Always/Usually get the social and emotional support they need	55.7%	57.5%	1.8%	3.2%	0.521		Ψ

*Statistically significant; NA = not asked/not comparably asked in given year

The content area of Lifestyle Influences on Health moves us toward the middle of the continuum of change. Two of the changes in lifestyle measures indicated significant improvement: current smokers who tried to quit and employees who are able to get up and move at least 8 times in a normal work day. Four measures saw significant worsening, including fewer employees falling within the normal BMI range. Physical activity also showed worsening,

with fewer employees meeting aerobic physical activity guidelines, strength-training guidelines, and both sets of guidelines simultaneously. The remaining measures were stable from 2013 to 2015.

3.4 PREVENTIVE HEALTH CARE

TABLE 4. PREVENTIVE HEALTH CARE	COMPARISON						
	2013	2015	Absolute Change	Relative Change	<i>p-value</i>	Change Code	Intervention Provided
Q34. Employees who visited a doctor for a routine checkup within the past 2 years	87.8%	87.6%	-0.2%	-0.2%	0.901		
Q35. Employees who had blood pressure checked by a health professional within the past year	86.6%	90.7%	4.1%	4.7%	0.023*		Ψ
Q36. Employees who last had a cholesterol test less than 5 years ago	91.1%	94.0%	2.9%	3.2%	0.050		Ψ
Q37. Employees who had a lab test for high blood sugar or diabetes within the past 3 years	65.8%	73.4%	7.6%	11.6%	0.003*		Ψ
Q38. Employees who had a seasonal flu vaccine during the past 12 months	52.8%	61.4%	8.6%	16.3%	0.002*		▲

*Statistically significant; NA = not asked/not comparably asked in given year

Two 2015 Preventive Health Care survey measures showed improvement compared to 2013 measures. A greater percentage of employees reported having a diabetes test in the past 3 years compared to 2013. In addition, a larger percentage received a flu vaccine within the past year. Changes were not practically significant for any of the other measures. However, given the excellent baseline rates reported by IUSB employees for routine checkups, blood pressure checks, and cholesterol testing, there is little room for improvement in this area. Maintenance of these high levels may then be viewed as a success.

3.5 STRESS

TABLE 5. IMPACT OF STRESS	COMPARISON						
	2013	2015	Absolute Change	Relative Change	<i>p-value</i>	Change Code	Intervention Provided
Q21. Employees who said stress (from all sources at work or at home) had <i>a lot</i> or <i>some</i> impact on their health in the past year	67.9%	65.8%	-2.1%	-3.1%	0.437		Ψ
Q19. Employees who responded Always/Often							
How often do you find your work stressful?	41.5%	44.9%	3.4%	8.2%	0.229		Ψ
How often do things going on at <u>work</u> make you tense or irritable at home?	NA	26.5%					
How often do things going on at <u>home</u> make you tense or irritable at work?	NA	5.8%					
How often in past month have you felt used up at the end of the day?	51.5%	44.3%	-7.2%	-14.0%	0.011*		Ψ

*Statistically significant; NA = not asked/not comparably asked in given year

One measure of the impact of stress showed improvement in 2015 compared to 2013. A significantly smaller percentage of employees reported feeling used up at the end of the day, with a relative change of -14.0%. Other measures remained stable. Additionally, in 2015, we added two new measures to help us better understand the interplay of stress between home and work. Based on these results, work stress affects employees at home more often than home stress affects employees at work. Despite greater reported access to opportunities to manage stress (as seen in Table 3.1), we do not yet see an overall reduction in the impact of that stress on employees' health.

3.6 HEALTH & ILLNESS

TABLE 6. HEALTH & ILLNESS	COMPARISON						
	2013	2015	Absolute Change	Relative Change	p-value	Change Code	Intervention Provided
Q14. Employees rating their health as fair or poor	8.4%	12.5%	4.1%	48.8%	0.016*		
Q15. Employees with one or more days of poor physical health in past 30	35.7%	38.5%	2.8%	7.8%	0.314		
Q16. Employees with one or more days of poor mental health in past 30	44.6%	46.3%	1.7%	3.8%	0.543		
Q17. Employees with one or more days in past 30 when poor physical/mental health interfered with usual activities	28.9%	32.7%	3.8%	13.1%	0.142		
<i>[Employees responding yes - Have you EVER been told by a doctor, nurse, or other health professional that you have...]</i>							
Q39. High blood pressure	19.9%	23.9%	4.0%	20.1%	0.090		Ψ
Q39. Borderline high or pre-hypertensive	13.7%	17.0%	3.3%	24.1%	0.102		Ψ
Q42. High blood cholesterol	42.6%	41.0%	-1.6%	-3.8%	0.593		Ψ
Q45. Diabetes	8.7%	9.3%	0.6%	6.9%	0.735		
Q45. Pre-diabetes or borderline diabetes	3.4%	5.7%	2.3%	67.6%	0.043*		Ψ
Q48. Asthma - ever	10.1%	16.7%	6.6%	65.3%	0.001*		
Q49. Asthma - among those ever diagnosed, those who <i>currently</i> have asthma	NA	67.8%					
Q51. Arthritis	21.4%	29.7%	8.3%	38.8%	0.001*		
Q53. Arthritis-related activity limitations	48.8%	39.6%	-9.2%	-18.9%	0.123		
Q57. Depressive disorder	29.2%	26.2%	-3.0%	-10.3%	0.239		▲
Q60. Heart disease	2.2%	4.2%	2.0%	90.9%	0.065		▲
Q61. Carpal tunnel syndrome	8.2%	11.2%	3.0%	36.6%	0.091		
<i>[Employees who self-identified having ...]</i>							
Q54. Chronic or recurrent low back pain	24.5%	33.5%	9.0%	36.7%	0.001*		
Q64 and Q65. Obesity (calculated BMI ≥30.0)	26.2%	35.1%	8.9%	34.0%	0.001*		Ψ
Q64 and Q65. Overweight (calculated BMI 25.0-29.9)	28.3%	29.8%	1.5%	5.3%	0.574		
Q62. Health problems they think may be due to physical surroundings at workplace	NA	24.9%					

*Statistically significant; NA = not asked/not comparably asked in given year

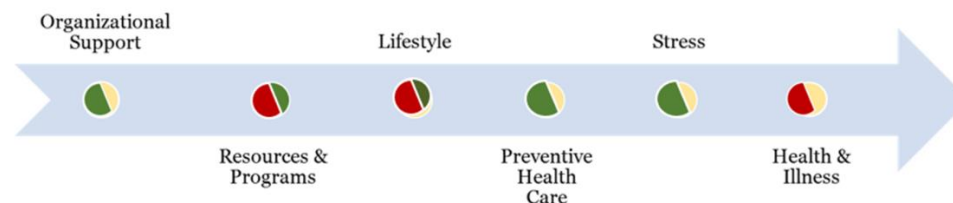
The final content area, to the far right of the continuum of change, describes the Health & Illness measures of IU employees. In this content area, the color-coded changes cannot be interpreted in the same straightforward manner as in previous sections. Some of the measures coded red (for significant increases) may, in fact, be positive and health-promoting. For example, an increase in those diagnosed with pre-diabetes or borderline diabetes may mean that employees are being screened and made aware of their risk at an earlier point where prevention of full disease is possible.

Overall, a higher proportion of employees reported having fair or poor health. Additionally, significant increases in the proportion of employees ever diagnosed with asthma, arthritis, and chronic back pain were reported. Obesity also worsened, remaining a significant health issue for employees. The remaining measures were stable from 2013 to 2015. Most of these conditions develop over a period of years, and a leveling-off of disease rates is considered success through fewer new diagnoses among employees, as it is essentially impossible for employees who have once been diagnosed with a condition to be “un-diagnosed.” As such, stabilization of these rates is a long-term aim.

4 CONCLUSIONS

What does this comparison of the 2013 and 2015 survey results tell us?

- Statistical and practical significance, as well as consistency between 2013 and 2015, give us confidence that observed changes (for better or worse) are **real changes** in the IUSB community.
- **Improvements** and **worsening** were found in content areas throughout the continuum of change.
- Where interventions were implemented, on the whole, more change occurred. In contrast, few measures significantly improved that did not have an associated intervention.
- We **held our ground** in some longer-term outcomes, but **worsened in others** during the two-year period. The most challenging outcomes, especially disease rates, take longer to show improvement, as chronic diseases typically develop over a period of years, and once an employee is diagnosed, they cannot revert back to the undiagnosed group. Holding ground in long-term outcomes such as disease rates is, therefore, success.
- We still have work to do, but we are moving in the right direction.





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A team within the **IU Richard M. Fairbanks School of Public Health at IUPUI** designs, conducts, and analyzes the IU Workplace Health & Wellness Survey on behalf of the multi-campus IU community. We are a team committed to employee confidentiality and quality data that drive healthy change. Any questions? Contact us at bhealthy@iu.edu

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