

Gauging Progress toward a Healthier IU: Focus on IU Kokomo

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.

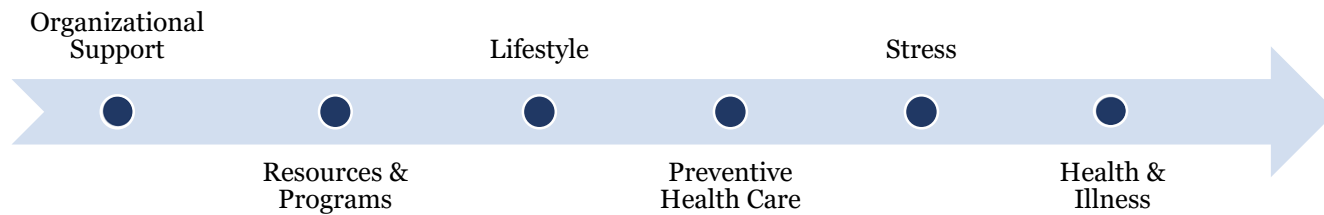
In 2015, the survey was repeated. This report focuses on the first aim, as we systematically compare 2013 survey results with 2015 results for IU Kokomo to assess our progress toward a healthier IU.

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 IUK between 2013 and 2015 in the context of this continuum.





2.2 COMPARATIVE ANALYSIS & INTERPRETATION

A total of 74 IUK employees responded to our survey, yielding a 29.1% 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, there were proportionally more females among respondents. In 2015, there were proportionally more faculty who responded. The weighting process compensates for such differences.

	2013		2015	
Demographics	Respondents	Full-Time Employees*	Respondents	Full-Time Employees
Sex				
Female	84%	61%	86%	62%
Male	16%	39%	14%	38%
Job Type				
Staff	72%	72%	61%	70%
Faculty	28%	28%	39%	30%

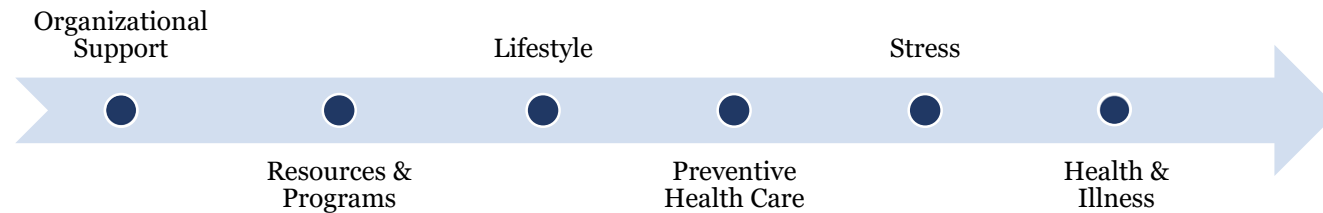
**2013 Full-Time Employee proportions have been corrected since originally reported.*

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 University-wide (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... 	= $\frac{(7.5\% - 5.6\%)}{5.6\%} = 1.9\%$ 5.6% 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... 	= $\frac{(87.9\% - 83.9\%)}{83.9\%} = 4.1\%$ 83.9% 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 $\geq +/-10\%$ relative change

3 COMPARATIVE RESULTS

The IUK 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 IUK 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)	63.5%	84.2%	20.7%	32.6%	<0.001*		▲
Q9. Overall, how safe do you think your workplace is? (Percent rating 7-10 on scale of 1-10)	86.6%	93.8%	7.2%	8.3%	0.002*		
Q20. All in all, how satisfied would you say you are with your job? (Percent satisfied/very satisfied)	78.5%	87.0%	8.5%	10.8%	0.010*		
Q11. Employees who Agree or Strongly Agree...							
The people you work with take a personal interest in you.	NA	83.6%					
In your workplace, your co-workers support your efforts to be healthy.	64.3%	66.5%	2.2%	3.4%	0.578		▲
Your supervisor is concerned about the welfare of those under him or her.	NA	70.6%					
In your workplace, management considers workplace health and safety to be important.	67.0%	67.8%	0.8%	1.2%	0.814		
IU has provided you with the opportunity to be physically active .	34.4%	77.3%	42.9%	124.7%	<0.001*		▲
IU has provided you with the opportunity to eat a healthy diet .	35.8%	45.2%	9.4%	26.3%	0.031*		
IU has provided you with the opportunity to live tobacco free .	92.1%	91.9%	-0.2%	-0.2%	0.937		▲
IU has provided you with the opportunity to manage your stress .	27.2%	44.2%	17.0%	62.5%	<0.001*		Ψ
IU has provided you with the opportunity to work safely .	82.6%	78.4%	-4.2%	-5.1%	0.194		

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

The content area of Organizational Support showed statistically and practically significant improvements in five measures (green). The greatest relative improvement (124.7% increase over 2013) was in the percentage of employees who say that IU has provided them with the opportunity to be physically active. Opportunities to manage stress showed the second highest improvement at a relative change of 62.5%. Levels of stress reported by employees in the initial 2013 survey were a top concern, and subsequent efforts were focused on improving this area of wellness. There was also a 32.6% increase over 2013 in the percentage of employees who say that IU is supportive of their personal health. Perceived opportunities to eat a healthy diet also increased, with a relative change of 26.3% compared to 2013. Finally, job satisfaction was shown to increase significantly (10.8% relative change, p=0.010). Remaining measures did not show significant statistical and/or practical changes.

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	<i>p-value</i>	Change Code	Intervention Provided
Access to clean drinkable water	NA	69.3%					
Opportunities to buy fresh fruits and vegetables	74.7%	71.0%	-3.7%	-5.0%	0.356		
Healthy food options in vending machines	38.4%	15.4%	-23.0%	-59.9%	<0.001*		
Healthy food options to purchase in the cafeteria or other food service	74.5%	75.1%	0.6%	0.8%	0.903		
1-on-1 nutritional counseling	NA	38.7%					Ψ
Stress management or stress reduction classes/programs	16.9%	20.8%	3.9%	23.1%	0.259		
A convenient place to work out or exercise (2015) - A place to work out or exercise such as an onsite exercise room (2013) †	36.4%	97.4%	61.0%	167.6%	<0.001*		Ψ
A place to bike or walk	73.2%	70.3%	-2.9%	-4.0%	0.421		Ψ
A walking program	7.5%	36.2%	28.7%	382.7%	<0.001*		Ψ
Ergonomics (work station or computer setup, proper lifting, etc.)	24.6%	35.1%	10.5%	42.7%	0.011*		
Flu shots at work	23.5%	26.4%	2.9%	12.3%	0.484		▲
Employee Assistance Program (access to professional counseling)	61.4%	69.5%	8.1%	13.2%	0.055		Ψ
Programs to help people stop smoking (of current smokers)	/	/					▲
Healthy weight/weight loss programs	20.3%	24.5%	4.2%	20.7%	0.260		
Blood pressure monitoring device available for self assessment	12.0%	54.6%	42.6%	355.0%	<0.001*		Ψ
A true smoke-free workplace	94.3%	82.6%	-11.7%	-12.4%	<0.001*		▲
A private area/lactation room for moms who are breast-feeding (of women aged 18-44)	45.3%	55.7%	10.4%	23.0%	<0.001*		▲
Signs that encourage stair use	9.3%	12.6%	3.3%	35.5%	0.239		▲
Markers that identify walking trails	NA	1.2%					
Easy to access maps of walking trails	NA	1.2%					Ψ
A designated person who communicates health and wellness information to your work group	NA	27.1%					▲

*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 evidenced in the several improvements seen – improvements that are both statistically and practically significant. In fact, relative increases of over 100% were measured for walking programs, blood pressure monitoring devices, and availability of convenient places to exercise. Significant increases were also seen in the percent of employees reporting access to ergonomics resources and in the percent of females aged 18-44 years reporting availability of a lactation room. In contrast, a significant decrease was seen in the percentage of employees who reported healthy options available to them in vending machines (-59.9% relative change), as did the percentage of employees with access to “a true smoke-free workplace,” which worsened by 12.4% relative to 2013. The remaining 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	59.6%	56.6%	-3.0%	-5.0%	0.456		Ψ
Q64 & Q65. Employees whose BMI falls within normal range (18.5-24.9)	20.0%	26.4%	6.4%	32.0%	0.136		Ψ
Q23. Employees who do not smoke cigarettes	93.0%	96.4%	3.4%	3.7%	0.079		▲
Q24. Current smokers who stopped smoking for one day or longer because they were trying to quit	/	/					
Q25. Employees who participated in some physical activities or exercises...during the past month	75.8%	91.7%	15.9%	21.0%	<0.001*		Ψ
Q26 and 27. Employees meeting the aerobic physical activity guidelines	54.0%	52.4%	-1.6%	-3.0%	0.781		
Q28. Employees meeting the strength-training guidelines	37.0%	48.8%	11.8%	31.9%	0.009*		
Q26-28. Employees meeting both aerobic and strength-training guidelines	30.0%	36.3%	6.3%	21.0%	0.100		
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	39.5%	46.4%	6.9%	17.5%	0.156		Ψ
Q18. Employees who Always/Usually get the social and emotional support they need	60.4%	54.0%	-6.4%	-10.6%	0.143		Ψ

*Statistically significant; NA = not asked/not comparably asked in given year; / = insufficient sample size for analysis

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 met our criteria for being both statistically and practically significant: the percentage of employees meeting strength-training guidelines and the

percentage of employees participating in some physical activities over the past month. The remaining measures did not exhibit a statistical and/or practical change over the two-year time period.

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	94.5%	84.3%	-10.2%	-10.8%	0.001*		
Q35. Employees who had blood pressure checked by a health professional within the past year	95.5%	95.1%	-0.4%	-0.4%	0.711		Ψ
Q36. Employees who last had a cholesterol test less than 5 years ago	96.2%	96.1%	-0.1%	-0.1%	0.933		Ψ
Q37. Employees who had a lab test for high blood sugar or diabetes within the past 3 years	86.5%	80.5%	-6.0%	-6.9%	0.078		Ψ
Q38. Employees who had a seasonal flu vaccine during the past 12 months	44.7%	38.1%	-6.6%	-14.8%	0.134		▲

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

2015 Preventive Health Care survey measures were stable and consistent over the time period for 4 of the 5 measures. Given the excellent baseline rates reported by IUK employees for routine checkups, blood pressure checks, and cholesterol testing, there is little room for improvement in this area. However, a significant decline in the percentage of employees getting a routine checkup over the past 2 years (-10.8% relative change) shows that while significant improvement may not always be possible, it is essential to maintain high levels and prevent worsening of these measures. Understanding why this decline has occurred and implementing efforts to reverse it will be necessary. As in 2013, there remains substantial room for improvement in seasonal flu vaccination among IUK employees.

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	77.4%	72.2%	-5.2%	-6.7%	0.177		Ψ
Q19. Employees who responded Always/Often							
How often do you find your work stressful?	51.3%	37.9%	-13.4%	-26.1%	0.002*		Ψ
How often do things going on at <u>work</u> make you tense or irritable at home?	NA	26.3%					
How often do things going on at <u>home</u> make you tense or irritable at work?	NA	5.0%					
How often in past month have you felt used up at the end of the day?	57.3%	56.7%	-0.6%	-1.0%	0.876		Ψ

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

Significantly fewer employees reported finding their work stressful in the most recent survey, with a relative change of -26.1% over the 2-year period. The impact of stress persisted from 2013 to 2015 for the other two measures taken at both time points: employees who said stress affected their health a lot or some in the past year and employees who felt used up at the end of the day over the past month. 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. While the stabilization of some stress measures and improvement in another are encouraging, much work remains to be done, as 72.2% of employees still report stress affecting their 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	23.9%	19.6%	-4.3%	-18.0%	0.239		
Q15. Employees with one or more days of poor physical health in past 30	35.1%	27.7%	-7.4%	-21.1%	0.081		
Q16. Employees with one or more days of poor mental health in past 30	45.6%	39.9%	-5.7%	-12.5%	0.204		
Q17. Employees with one or more days in past 30 when poor physical/mental health interfered with usual activities	24.3%	26.0%	1.7%	7.0%	0.639		
<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	42.2%	36.7%	-5.5%	-13.0%	0.194		Ψ
Q39. Borderline high or pre-hypertensive	9.5%	5.2%	-4.3%	-45.3%	0.064		Ψ
Q42. High blood cholesterol	50.4%	48.3%	-2.1%	-4.2%	0.684		Ψ
Q45. Diabetes	11.2%	13.5%	2.3%	20.5%	0.450		
Q45. Pre-diabetes or borderline diabetes	5.9%	8.4%	2.5%	42.4%	0.295		Ψ
Q48. Asthma - ever	19.5%	15.1%	-4.4%	-22.6%	0.182		
Q49. Asthma - among those ever diagnosed, those who <i>currently</i> have asthma	NA	30.9%					
Q51. Arthritis	33.3%	38.1%	4.8%	14.4%	0.279		
Q53. Arthritis-related activity limitations	24.3%	30.8%	6.5%	26.7%	0.354		
Q57. Depressive disorder	17.4%	19.9%	2.5%	14.4%	0.460		▲
Q60. Heart disease	2.3%	1.5%	-0.8%	-34.8%	0.540		▲
Q61. Carpal tunnel syndrome	12.1%	16.8%	4.7%	38.8%	0.146		
<i>[Employees who self-identified having ...]</i>							
Q54. Chronic or recurrent low back pain	29.7%	21.4%	-8.3%	-27.9%	0.029*		
Q64 and Q65. Obesity (calculated BMI ≥30.0)	53.0%	43.1%	-9.9%	-18.7%	0.037*		Ψ
Q64 and Q65. Overweight (calculated BMI 25.0-29.9)	27.0%	30.5%	3.5%	13.0%	0.373		
Q62. Health problems they think may be due to physical surroundings at workplace	NA	16.1%					

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

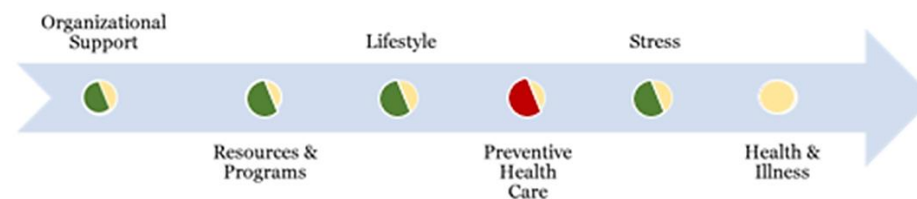
The final content area, to the far right of the continuum of change, describes the Health & Illness measures of IUK employees. In this content area, the color-coded changes cannot be interpreted in the same straightforward manner as in previous sections. A leveling-off of disease rates is considered 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.” Stabilization of these rates is a long-term aim, as most of these conditions develop over a period of years. Encouragingly, though, significant improvements were found in two measures: the percentage of employees with chronic or recurrent low back pain and the percentage of employees considered to be obese. All other measures remained stable.

In future surveys, should an increase in prevalence of a condition be found, it may not necessarily be indicative of an increase in the illness, but rather an increase in the diagnosis of the illness. For example, an increase in pre-diabetes diagnoses may not mean more employees have pre-diabetes, but rather more are having their condition caught earlier, prior to developing into diabetes. Currently, however, this has not been observed at IUK.

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 IUK community.
- **Improvements** are seen particularly in those content areas to the left of 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 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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