



# Nutrition in Workplace

AHMAD SYAFIQ, PHD & DR. SANDRA FIKAWATI, MPH  
CENTER FOR NUTRITION AND HEALTH STUDIES  
UNIVERSITAS INDONESIA

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# Background

- ▶ Workplace is a promising place for health promotion.
- ▶ It has been estimated that over 80% of the companies with 50 or more employees and almost all large employers offer some kind of health improvement programme.
- ▶ The workplace offers structure to reach large groups and social network that can be used.

# Background

- ▶ Is it effective? Not necessarily, because:
  - (1) a low, selective participation,
  - (2) lack of adherence to the programme, and
  - (3) an intervention period too short for sustainable behaviour change.

# Existing Systematic Review

- ▶ Shain and Kramer, 2004
- ▶ Hutchinson and Wilson, 2011
- ▶ Blake *et al.*, 2013
- ▶ Montano *et al.*, 2014
- ▶ Coffeng *et al.*, 2014
- ▶ SchrÖer, Haupt, and Pieper, 2014

# Main findings (Shain and Kramer, 2004)

- ▶ Health promotion programmes will only be effective in enhancing the health status of the workforce when the interventions attend to **both individual and environmental influences**.
- ▶ Focusing on personal health practices through programmes targeted exclusively at individual behaviour is likely to yield minimal benefits compared with interventions that also target the **organization** and **design of work** as key influences on health.
- ▶ A comprehensive approach to health promotion in the workplace is therefore one in which both individual and organisational influences on health are targeted simultaneously.

# Main findings (Hutchinson and Wilson , 2011)

- ▶ The current meta-analysis found most support for workplace interventions that used **motivation enhancement** such as **motivational interviewing** or the **use of rewards**. Therefore, future interventions targeting the diet or physical activity of employees should incorporate this approach in their programmes.
- ▶ Interventions that were associated with **one main area of change** (e.g. diet OR physical activity OR health) were associated with larger mean effect sizes.
- ▶ In terms of study design, **randomized controlled trials** were associated with larger effects. **Long-term maintenance of changes** should also be evaluated in order to determine the extent to which workplace interventions can make sustainable changes to individuals' health.

# Main findings (Blake *et al.*, 2013)

- ▶ This work demonstrates that workplace interventions are achievable in NHS workplace settings, and confer positive outcomes in those organisations where employers demonstrate a **commitment to health and wellness** that is fully integrated with their mission, values and long-term vision.
- ▶ However, to generate significant behaviour change in a range of target health behaviours, such schemes need to be **flexible** and continually **responsive** to its consumers; as such it should be recognised that wellness programmes require **continual adjustment** to alter the targeting of activities in response to user need.

# Main findings (Montano *et al.*, 2014)

- ▶ The meta-analysis of 36 randomized controlled worksite intervention studies revealed small, but significant effects on four relevant health outcomes: **weight reduction, healthy nutrition, reduced musculo-skeletal symptoms**, and lower levels of perceived **stress**.
- ▶ As only few studies were conducted among employees with lower socioeconomic standing, the challenge of reducing work-related health inequalities by targeting health-promoting activities at occupational groups with high needs remains largely unmet.
- ▶ Due to lack of statistical power, our study **could not confirm a moderation of intervention effects by occupational class**. Nonetheless, future research should aim at bridging worksite intervention research with scientific inquiry into **social determinants of health**



# Main findings (Coffeng et al., 2014)

- ▶ This study aimed to evaluate the effectiveness of combined worksite social and physical environmental intervention on several work-related outcomes, as well of both interventions separately. In comparison with the control group, statistically significant, but small, changes in **contextual performance**, **dedication**, **task performance** and **absorption** were found.
- ▶ The interventions did not demonstrate a significant effect on presenteeism and absenteeism, but all of them were in the expected direction.
- ▶ Some recommendations: engage mid level management (i.e. mid level managers/supervisors should integrate the health program into daily operations and communicate with employees to optimise participation; link health promotion objectives to business objectives and consider incentives and rewards.

# Main findings (Schröder, Haupt, and Pieper, 2014)

- ▶ Workplace health promotion interventions may improve **physical activity, dietary behaviour** and **healthy weight**. There is no evidence of increased efficacy associated with specific intervention types.
- ▶ Workplace health promotion **should focus on either physical activity or weight or nutrition behaviour** to maximize effectiveness. Best evidence is available for multi-component interventions.
- ▶ Our review found that employees' dietary behaviour could be influenced by workplace interventions based on **nutritional education solely** or **combined with environmental modifications**.
- ▶ Physical activity was increased by multi-component interventions including step counting, active commuting & organizational changes.
- ▶ **Multi-component programmes** were most effective in promoting a healthy weight among employees.



# INDOFOOD NUTRITION FOR WORKFORCE PROGRAM



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# Introduction (1)

- ▶ Nutrition and health status of worker is key to industrial productivity. Good nutritional status relates to both physical and mental performances and directly related to morbidity and absenteeism.
- ▶ Good nutrition also influence work safety. Lack of focus and concentration, less agility and less dexterity could be caused by malnutrition and could affect work-related injury.

# Introduction (2)

- ▶ Nutrition program in workplace has not been paid sufficient attention so far in Indonesia. Workplace provide ample opportunity for effective nutrition intervention.
- ▶ Indofood committed to improve life quality of its workers through improvement of healthy lifestyle and creating workplace environment that enable workers to apply healthy lifestyle.

# Introduction (3)

- ▶ It is very important to have initial nutrition assessment:
  - ▶ Baseline situation of nutrition perception
  - ▶ Nutrition situation mapping
  - ▶ Guide for program priorities
  - ▶ Baseline to measure achievement
  - ▶ Includes:
    - ▶ Health and nutrition status,
    - ▶ Food consumption situation,
    - ▶ Built environment situation, and
    - ▶ Nutrition knowledge, attitude and practice

# Objectives

15

- ▶ To compile, to analyze, and to describe nutrition and health situation in selected factories.
- ▶ To increase nutrition and health knowledge, attitude, and practice of workers
- ▶ To develop program monitoring and evaluation based on evidences and reliable, valid measurements
- ▶ To develop *Lessons Learn Model* as a sustainable knowledge management action

# Activities

4 activities :

1. Nutrition Assessment (Baseline and Endline Survey);
2. Main Intervention: Nutrition education for workers;
3. Modification of nutrition built environment; and
4. Development of mon-ev system and *lessons learn model*.



# Nutrition Assessment (Baseline & Endline Survey) <sup>(1)</sup>

- ▶ Food consumption study
  - 2X24 hr recall
- ▶ Lab examination
  - Hb level
- ▶ Anthropometric
  - Weight
  - Height
  - Body fat

# Nutrition Assessment (Baseline & Endline Survey) <sup>(2)</sup>

- ▶ Medical history
  - MCU record
- ▶ Nutrition KAP Survey
  - Questionnaire
- ▶ Physical activity and fitness measurement
  - *Daily activity*
  - Fitness level

# Main Intervention: Nutrition Education for Workers <sup>(1)</sup>

## 1. Nutrition Seminars

Awareness raising seminar (1x @factory).

## 2. Educator Training

Nutrition educators are graduates from nutrition higher education D3-S1 level

# Main Intervention: Nutrition Education for Workers <sup>(2)</sup>

## **3. Peer Educator Trainings**

25 peer educators in each factory (2x @factory).

## **4. Peer Educator Refreshing Trainings**

Recharging for peer educator and mon-ev data collection (4x@factory).

# Modification of Nutrition Built Environment(1)

## 1. **Assessment of Food Consumption Environment**

Canteen, cafeteria, and other sources of workers' food consumption

## 2. **Assessment of Healthy Lifestyle Environment**

Assessing healthy lifestyle supporting environment such as hand washing facilities, latrines, waste bins, etc

## 3. **Assessment of Lactation Support**

Assessing lactation situation among female workers and the supporting environment in workplace

# Modification of Nutrition Built Environment(2)

## **4. Assessment of Fitness Facility**

Assessing fitness facilities and fitness activities provided in factory

## **5. Evaluation of Assessment Results**

To be concluded and followed up by management

# Development of Monev System and Lessons Learn Model (1)

1. Monev system is developed for each activity using input, process, and output indicators
2. Final evaluation would assess objectives achievement including outcome indicators
3. Lessons Learn Model is developed by compiling success stories and failure stories as to make tacit knowledge and experiences to be more explicit and documented for future development



Antropometry assesment training



Training for enumerators





## Data collection's activities in Factory 1

25



## Interview and fill in questionnaires



## Haemoglobin assesment

## Nutrition seminars' activities in Factory 2

26



Opening ceremony by Ibu Dwi



Opening ceremony by Factory 2's representative



Ice breaking "Coconut"



Discussion

# Nutrition Media

**Indofood** 2016 **AGUSTUS**

**KALENDER GIZI SEIMBANG**

**Pilar 1: Makanlah beranekaragam pangan!**  
Setiap makanan memiliki kandungan zat gizi yang berbeda dan tidak ada satu makananpun yang memiliki zat gizi lengkap. Semakin beragam jenis makanan yang dikonsumsi maka semakin mudah kebutuhan zat gizi seseorang terpenuhi.

- Makanan Pokok (3-4 porsi/hari):** Sumber energi utama, mengandung karbohidrat.  
Contoh: Nasi, mie, roti, kentang, ubi, jagung
- Lauk-pauk (2-4 porsi/hari):** sumber protein, terdiri dari lauk hewani dan nabati.  
Contoh lauk hewani (berasal dari hewan): Daging, ayam, ikan/seafood, telur, susu dan olahannya.  
Contoh lauk nabati (berasal dari tumbuhan): Tempe, tahu, kacang-kacangan
- Sayur (3-4 porsi/hari) dan buah-buahan (2-3 porsi/hari):** sumber vitamin dan mineral.  
Contoh sayur: Kangkung, buncis, wortel, brokoli, selada, dll.  
Contoh buah: Apel, jeruk, mangga, pisang, dll.

**Pilar 2: Biasakan Perilaku Hidup Bersih!**

- Cuci tangan menggunakan air mengalir dan sabun.  
Pode wash: Sebelum dan sesudah makan, sebelum dan sesudah memegang makanan, Setelah ke toilet atau menggunakan fasilitas umum, Setelah membersihkan ASI, Setelah memegang binatang, Setelah selesai bekerja.
- Jajalah lingkungan tetap bersih dengan membuang sampah pada tempatnya!
- Pilihlah cemilan sehat dan bersih.  
Pilihlah makanan setingan yang: Rendah lemak, Tidak manis, Tidak mengandung bahan kimia berbahaya.  
Contoh makanan setingan yang sehat dan bergizi.

Sumber: Pedoman Gizi Seimbang, Kemenkes RI, 2014.

**KALENDER GIZI SEIMBANG** 2016 **DESEMBER**

**Pilar 3: Lakukanlah aktivitas fisik secara teratur!**  
Aktivitas fisik adalah setiap gerakan tubuh yang meningkatkan pengeluaran tenaga/energi dan pembakaran energi. Aktivitas fisik memperlancar sistem metabolisme di dalam tubuh termasuk metabolisme zat gizi. Aktivitas fisik berperan dalam menyebarkan zat gizi yang keluar dari dan yang masuk ke dalam tubuh.  
Latihan fisik atau olah raga adalah semua bentuk aktivitas fisik yang dilakukan secara terstruktur dan terencana, dengan tujuan untuk meningkatkan kesegaran jasmani. Aktivitas fisik dikategorikan cukup apabila seseorang melakukan latihan fisik selama 30 menit setiap hari (minimal 3-5 hari/minggu).

**Jenis-jenis latihan fisik/olah raga:**

- Bersepeda
- Bermain Sepak Bola/Futsal
- Bermain Bola Voli
- Bermain Tenis Meja
- Berjalan/Berlari
- Berenang

Sumber: Pedoman Gizi Seimbang, Kemenkes RI, 2014.

**Pilar 4: Pantaulah Berat Badan Secara Teratur!**  
Memantau berat badan sebaiknya dilakukan minimal sekali dalam satu bulan untuk mengetahui status gizi. Status gizi dapat diukur dengan menghitung Indeks Massa Tubuh (IMT).

**Cara menghitung Indeks Massa Tubuh:**  
IMT (kg/m<sup>2</sup>) =  $\frac{\text{Berat Badan (kg)}}{(\text{Tinggi Badan (m)})^2}$

IMT	Kategori	Kekurangan berat badan tingkat berat
< 17,0	Sangat kurus	Kekurangan berat badan tingkat ringan
17,0 - 18,4	Kurus	Kekurangan berat badan tingkat ringan
18,5 - 25,0	Normal	
25,1 - 27,0	Gemuk (overweight)	Kelabihan berat badan tingkat ringan
> 27,0	Obes	Kelabihan berat badan tingkat berat

Upayakan status gizi (IMT)-mu berada dalam kategori normal!

Kalender

**PEDOMAN GIZI SEIMBANG (PGS)**  
Modul 1 Nutrition for Workforce Program Indofood

Pusat Kajian Gizi dan Kesehatan  
Fakultas Kesehatan Masyarakat  
Universitas Indonesia  
Juni 2016

**Indofood**

**Tumpang Gizi Seimbang**

- Sebelum setiap tumpang, sampaikan Pilar 1 (mulai makanan beranekaragam)
- Gambar memuat tangan di sebelah kiri bawah tumpang, mengagungkan Pilar 2 (memastikan perilaku hidup bersih).
- Gambar memuat, bersepeda, jemur, dan berjalan terdapat di dasar tumpang mengagungkan Pilar 3 (melakukan aktivitas fisik secara teratur)
- Gambar memimbang berat badan di sebelah kanan bawah tumpang mengagungkan Pilar 4 (memantau dan mempertahankan berat badan normal)

Modul Seminar Gizi

**PEDOMAN GIZI SEIMBANG (PGS)**  
Modul Peer Educator  
Nutrition for Workforce Program Indofood

Pusat Kajian Gizi dan Kesehatan  
Fakultas Kesehatan Masyarakat  
Universitas Indonesia  
Juni 2016

**Indofood**

**Apasaja Komponen dalam Pedoman Gizi Seimbang?**

- Pilar PGSS: 4 Pilar Gizi Seimbang
- Visualisasi Gizi Seimbang: Tumpang Gizi Seimbang - Panduan Konsumsi Setiap Hari
- Piring Mahalnya: Rajam Sehat Makan
- Slogan Gizi Seimbang: 30 Petrus Gizi Seimbang
- Slogan Gizi Seimbang: Gizi Seimbang Bangga Sehat Berprestasi

**4 Pilar Gizi Seimbang**

**GIZI SEIMBANG**

- Makanan Beranekaragam
- Perilaku Hidup Bersih
- Melakukan Aktivitas Fisik
- Mempantau Berat Badan

Empat Pilar Gizi Seimbang merupakan rangkaian upaya untuk mencapai keseimbangan energi, energi masuk = energi keluar dengan memantau berat badan (BB) secara teratur.

Modul Peer Educator



Preparing Lunch meals in the  
Canteen



Utensils' place



Utensils' place



Lunch sample menu

# Meeting with Japan Ministry for Workforce & Industry and PT Indofood 17 November 2016





# Results



# Nutrition KAP

# 1. Increased Knowledge



	Factory 1	Factory 2	Factory 3	Factory 4	Total
<b>n</b>	185	248	114	157	704
	Mean				
<b>Pretest</b>	56.65	54.32	54.78	57.33	55.67
<b>Posttest</b>	60.30	58.57	61.49	66.21	61.20
<b>Gap</b>	3.65	4.25	6.71	8.88	5.53
<b>p-value pre-post</b>	0.001*	0.001*	0.001*	0.001*	0.001*

Note:

Minimum-Maximum score: 0-100

Number of question: 20

\*) p-value < a (5%)

- In total, there was significant increase in knowledge score from 55.67 to 61.20



## 2. Slightly better attitude



	Factory 1	Factory 2	Factory 3	Factory 4	Total
<b>n</b>	185	248	114	157	704
			Mean		
<b>Pretest</b>	3.80	3.77	3.81	3.75	3.78
<b>Posttest</b>	3.86	3.78	3.86	3.78	3.82
<b>Gap (mean)</b>	0.06	0.01	0.05	0.03	0.04
<b>p-value pre-post</b>	0.022*	0.647	0.154	0.320	0.014*

Note:

Minimum-Maximum Score: 1-5

Number of question: 10

The highest the score, the better the attitude

\*) p-value <  $\alpha$  (5%)

# 3. Increased nutrition practices



	Factory 1	Factory 2	Factory 3	Factory 4	Total
<b>n</b>	185	248	114	157	704
	Mean				
<b>Pretest</b>	44.23	45.56	49.42	52.02	47.28
<b>Posttest</b>	53.87	48.99	56.87	58.28	53.62
<b>Gap</b>	9.64	3.43	7.45	6.26	6.34
<b>p-value pre-post</b>	0.001*	0.017*	0.001*	0.001*	0.001*

Note:

Minimum-Maximum score: 0-100

Number of question: 6

\*) p-value < a (5%)

- In total, there was significant increase on nutrition practice score from 47.28 to 53.62



# Healthy Lifestyle



# Increased Score of Healthy Lifestyle

## Based on Factory

	Factory 1	Factory 2	Factory 3	Factory 4	Total
<b>n</b>	185	248	114	157	704
	Mean				
<b>Pretest</b>	30,27	19,96	20,61	26,51	24,24
<b>Posttest</b>	27,77	26,06	23,14	31,61	27,27
<b>Gap</b>	-2,5	6,1	2,53	5,1	3,03
<b>p-value pre-post</b>	0,122	0,000*	0,144	0,001*	0,000*

## Based on Employee Type

	Blue Collar (porter)	Blue Coll Operator	White Collar	Total
<b>n</b>	137	355	212	704
	Mean			
<b>Pretest</b>	22,35	22,64	28,13	24,24
<b>Posttest</b>	22,54	27,32	30,25	27,27
<b>Gap</b>	0,19	4,68	2,12	3,03
<b>p-value pre-post</b>	0,919	0,000*	0,131	0,000*

Note:

Minimum-Maximum Score: 0-100

Number of question: 8

The highest the score, the better the attitude

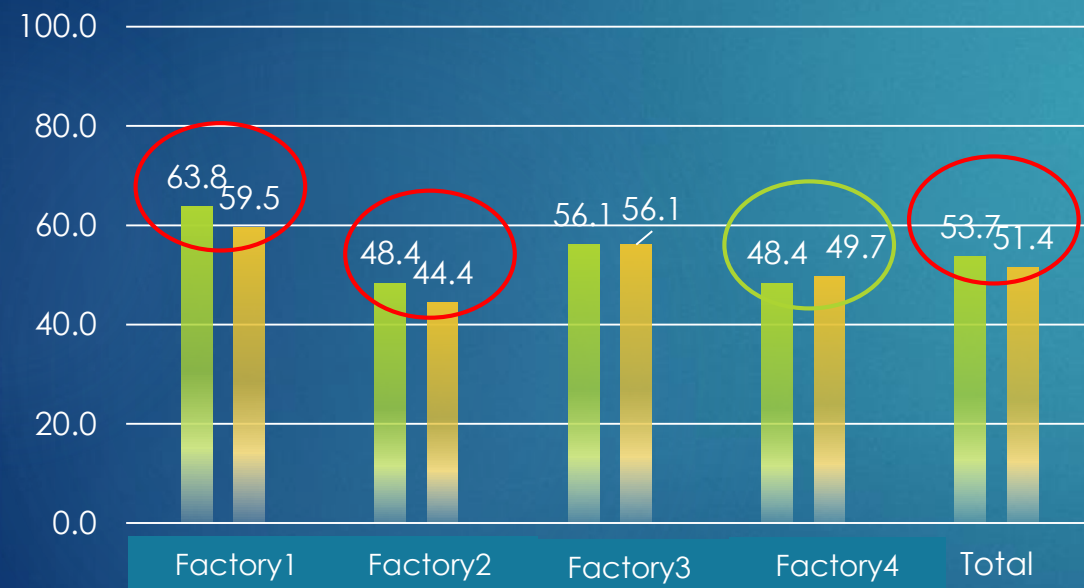
\*) p-value < a (5%)

- In total, there was significant increase on score of healthy lifestyle. However, the score is considered low.

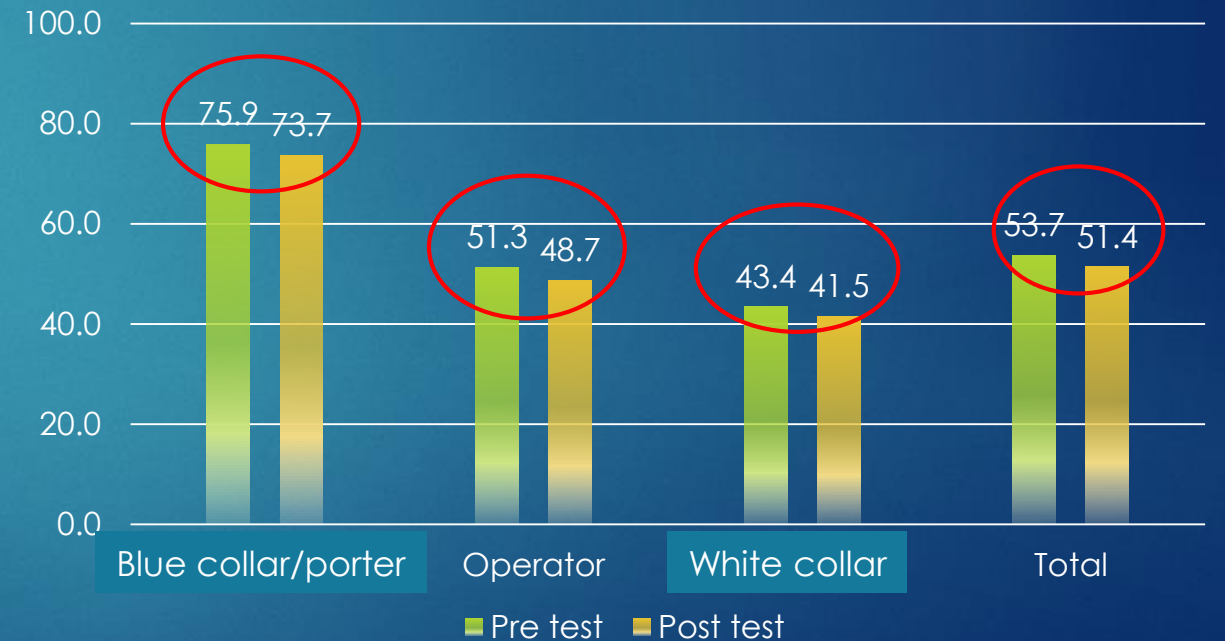
# Slight decrease in smoking habit



### Based on factory



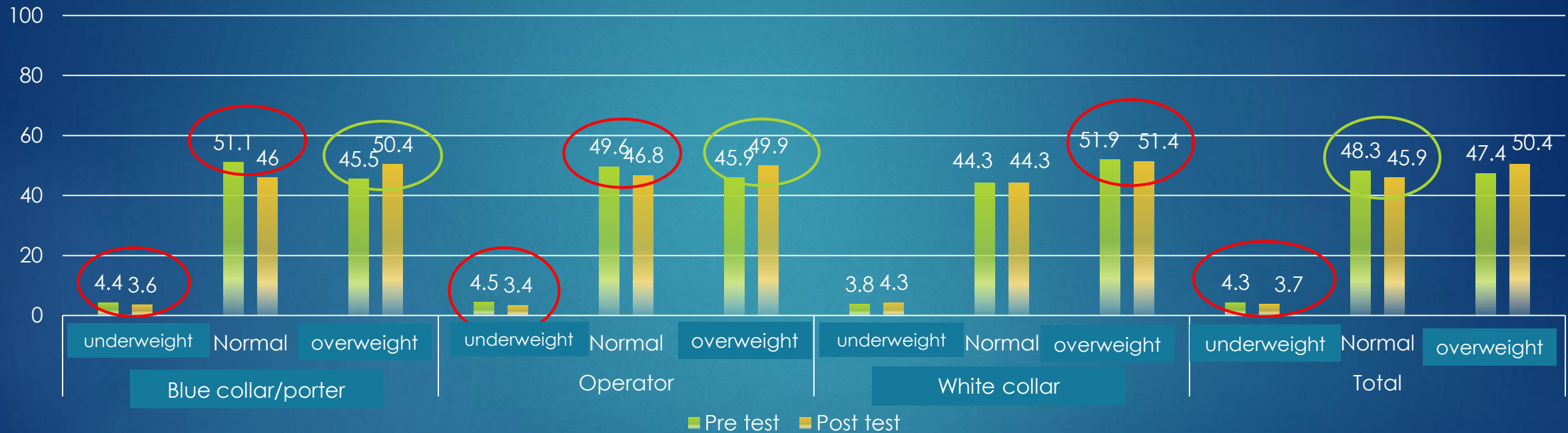
### Based on employee type





# Body Mass Index

# Body Mass Index Categories Based on Employee Type



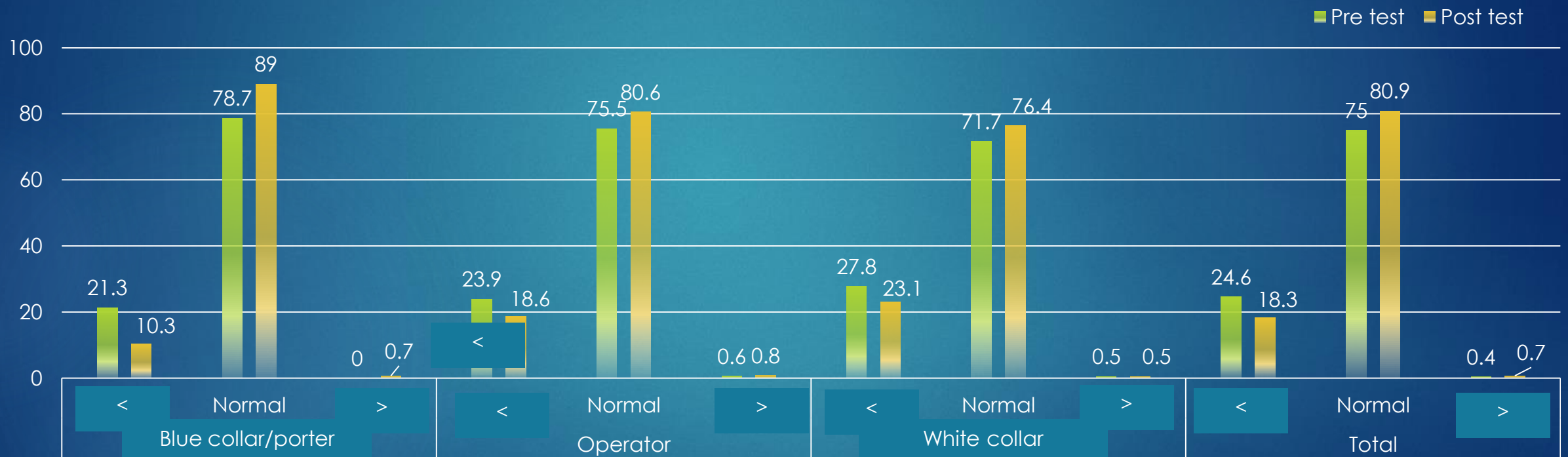
The intervention was successful in decreasing IMT among White Collar employees but not among Blue Collar employees yet.



# Haemoglobin



# Haemoglobin



All employees, regardless of type, experienced increasing number of normal haemoglobin level.

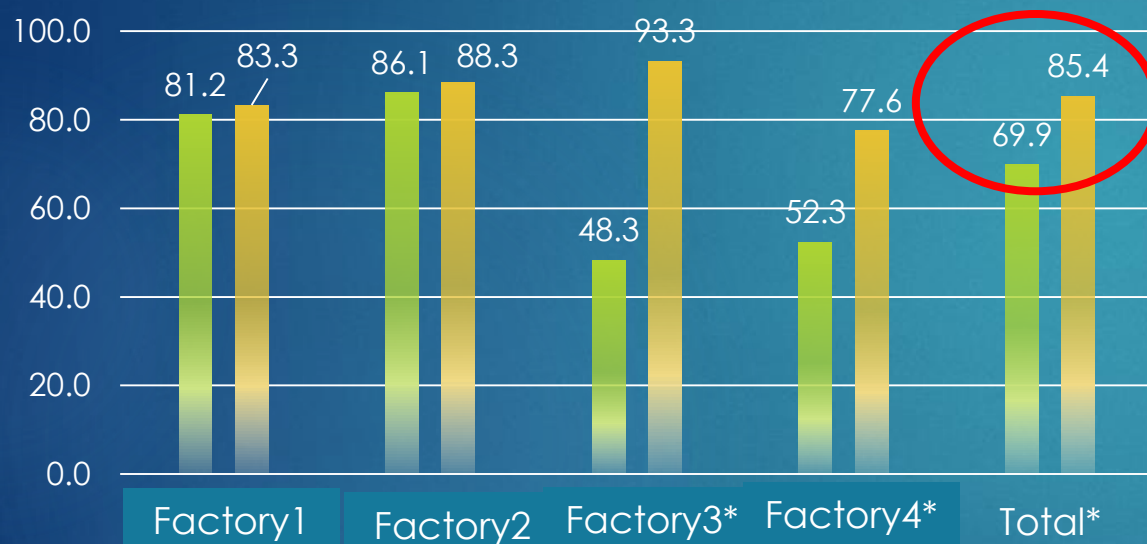


# Physical fitness

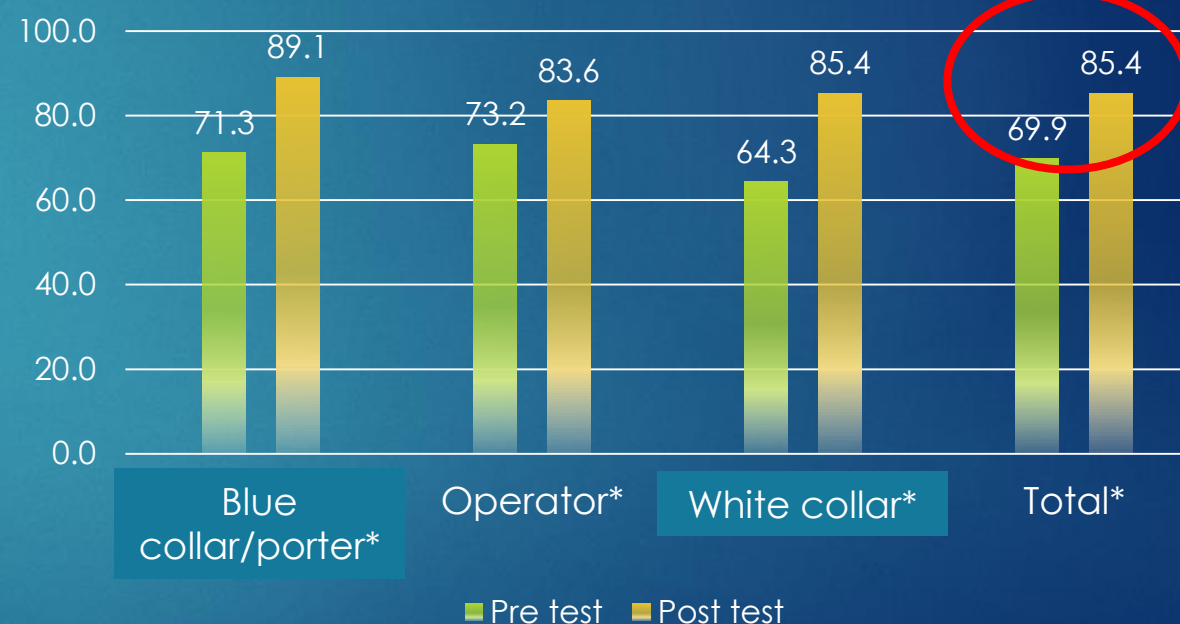
# Respondents with good fitness level



## Based on Factory



## Based on Employee Type



\*) significant at  $\alpha=0.05$

There was significant increase on physical fitness level

# Conclusion

- ▶ Nutrition for Workforce Programme, in form of mass education and group education through peer educator, in three months, was successfully increase:
  - ▶ Knowledge on balanced nutrition,
  - ▶ Attitude towards nutrition,
  - ▶ Nutrition practices,
  - ▶ Normal haemoglobin level, and
  - ▶ Physical fitness.
  - ▶ However, for BMI, the reduction was found among white collar employees but not among blue collar employees.
- ▶ Monitoring system provided early evidence on the process and effectiveness of the implementation. These, in turn, provided inputs for process and implementation improvement.
- ▶ Lessons Learn Model has been developed and revealed knowledge based on experience (*from tacit to explicit*).

# Conclusion

## ▶ Need to be maintained:

- Pre-post test
- Standardization of education material
- *Peer educator approach*
- Incentive/reward/recognition of *peer educator*
- Integration to factory management
- Evaluation for each factory
- Characteristics of NfW: Education, measurement and monitoring of nutritional status, employee empowerment

# Conclusion

▶ **Need to be changed:**

- Time constraints for peer education.
- Regeneration and new recruitment of peer educator
- Creative activities of *peer educator*



Thank You