

Youth at work: challenges for a sustainable future



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Contents

1. Demographics: Worldwide, Latin America
2. Youth labor in Brazil
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Worldwide Youth at Work

1,200,000,000 billion young people aged 10 to 19 years all over the world



620 million (51.6%) are in the labor force
(UNFPA, 2011)



2010-2015

South Asia*	26% - 28%	46%
Eastern Asia**	20% - 18%	
Sub-Saharan Africa	14% - 15%	
Developed countries & EU	10% - 10%	
Latin America & the Caribbean	9% - 9%	
Southeast Asia & the Pacific	9% - 9%	

*Butan, Bangladesh, India, Maldives, Nepal, Pakistan, Sri Lanka
** China, Japan, Macau, North Korea, South Korea, Taiwan

Youth at Work - Latin America



44.3 million young students live in Latin America



12.6 million (28.44%)
are studying and working.

(ILO, 2010)

Youth at Work - Brazil



In Brazil, out of 34.7 million young people, 18.2 million have some occupation, and about 6.3 million are working students.

(ILO, 2009)

Age bracket: 15-24 years old

Youth age bracket:

ILO: 15-24 years old

WHO: 10-20 years old

European Directive 33/94: youths: 15- 18 years old

Brazilian government* - national public policies directed to youth population: 15-29 years old

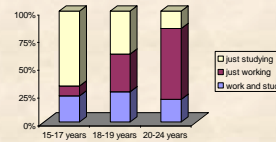
Brazilian government* - Statute for Children and Adolescence: 12-18 years old (exceptionally up to 21 years old)

These differences bring difficulties to make worldwide comparisons!

Youth labour in Brazil

❖ The Economic Active Population according to Statistics and Geography Brazilian Institute, was 99,500,000 million in 2009; 51,635 million were in the age bracket of 10-24 years old (IBGE, 2009).

Age bracket	Population	Work and Study	Just working	Just studying	House keeping	No activity
10 -- 15	21,334,000	9,0%	1,1%	87,1%	1,7%	1,2%
16 -- 17	6,777,000	23,4%	10,2%	54,8%	8,3%	3,3%
18 -- 19	6,963,000	19,3%	32,3%	25,8%	17,0%	5,7%
20 -- 24	16,561,000	15,1%	47,7%	11,7%	20,6%	4,9%



http://www.ibge.gov.br/home/estatistica/populacao/trabalhoerendimento/pnad2009/pnad_sintese_2009.pdf

Brazilian child labor regulations

- Prohibits minors <18 years to work at night or in dangerous or unhealthy conditions;
- Minors <16 years forbidden to work, except as apprentices/trainees at age 14;

Child Adolescent Labor Statute 8.069, 13/7/1990

Characteristics of Adolescence

- Biological aspects: physical /sleep-wake cycle changes (onset and offset delay);
- Cognitive aspects: intellectual and emotional changes
- Personality features: identity shaping, moral/ethical development values
- Social and cultural aspects: changes in responsibility, independence, socialization, family and friends relationships.

Youth at Work Positive aspects

(2005)

The Youth Work Force Unique Occupational Health Considerations and Challenges

by Christine Wood, BSc(NMBA), PhD, AICD, E-EO Officer, E-EO Coordinator, PHD, MEd, MPH, FRC, and
Shirley T. Fitzpatrick, PhD, CDEP

- ✓ Impart positive work values
- ✓ Provide a better understanding of the workplace
- ✓ Increase contact with adults
- ✓ Benefits to school performance, as it may motivate adolescents to stay in school and continue studying.
- ✓ Reinforce the importance of academic skills for future career success
- ✓ Enhance self-concept

Youth at Work

When Work Matters: The Varying Impact of Work Intensity on High School Dropout

Jessie C. Lee
University of Missouri
Faculty Staff
Pennsylvania State University

• Positive aspects

- ✓ Technical and Professional qualification
- ✓ Teaches about punctuality, dealing with people, and money management

• Negative aspects

- **Work >20h/week:**
- ✓ interferes with the quality of school performance
- ✓ Undermines study time and motivation to study
- ✓ Contributes to school dropout

(2007)



Paula Galasso

Work injuries

Youth at Work - Injuries

Incidence of severe work-related injuries among young adult workers in Brazil: analysis of compensation data

Vivian Souza Santana,¹ Andréia Vilavaca,² Shikant L. Bangwala,³ Carol W. Runyan,⁴ Paulo Rogério Albuquerque Oliveira⁵

- Young workers aged between 15 and 24 years old have higher work injury rates than adult workers
- Men were over three times more likely to have a severe work-related injury than women
- The young age group (16 e 19 years) had higher work-related injury risks than those aged 20 e 24 years

Santana et al, 2011

Work Injuries among middle and high school students in two rural areas of São Paulo state, Brazil.



Santo Antonio de Pinhal (pop~5,000)
Monteiro Lobato (pop~4,000)

Fischer FM, et al, 2003



Working teens: 9.6% and 12.0% of all junior and high school students in Monteiro Lobato and Santo Antonio do Pinhal, SP, Brazil, 1998.



Santo Antonio do Pinhal, SP, Brazil, 1998.

Associated factors for work injuries in the present job. Sto Antonio do Pinhal and Monteiro Lobato, 1998.

- Males (OR=1.8))
- Afternoon classes (OR=2.2)
- Entered the labour force under 11 years old (OR=1.7)
- Worked as domestic servant (OR=2.3), waiter (OR=4.3) and brickmaker/tiler (OR=7.0).
- Worked with dangerous objects and machines (OR=2.2)
- Reported physical effort at work (OR=1.7)
- Presence of toxic substances at the workplace (OR=1.9)

Ajusted by sex and age



A girl, 12 years old, working with pliers adjusting hooks on earrings, at her home in Limeira, a small town 150 km from São Paulo. There were (in 2006) ~ 2,000 students (children and adolescents < 17 years old) working with their parents for 450 companies of costume jewelry. They earned 1.5 to 3 US\$ dollars per one-thousand assembled parts (5.0- 11.0 US\$/day).

SRI were reported among children and adolescents.

Vilela & Ferreira, 2005.

Effects of work on teens' health



Fischer FM et al. 2001- 2005. Working and living conditions of high school students, attending morning and evening classes. São Paulo. Public middle school.

Aims

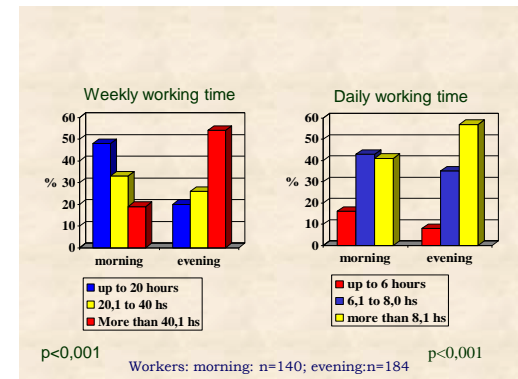
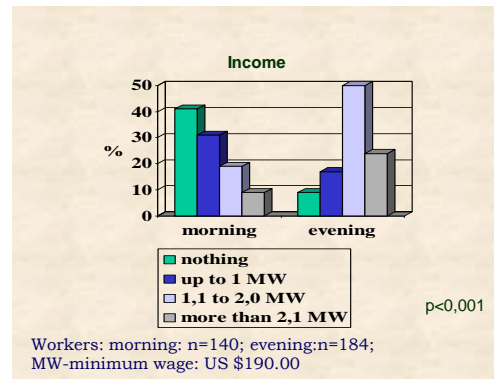
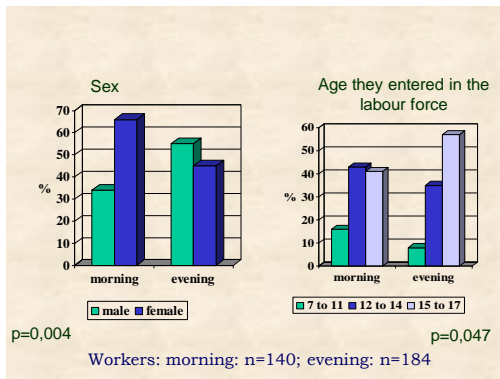
-Analysis of working, living conditions, life styles, reported health outcomes and well-being.

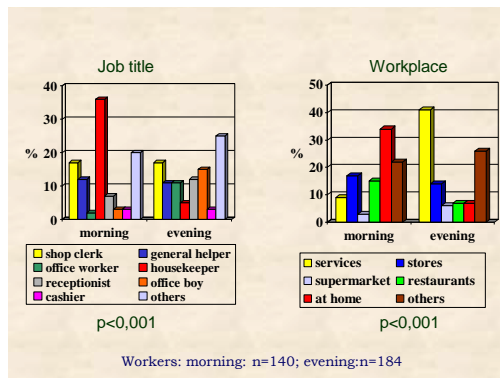
-Evaluation of the **sleep-wake cycle** among working and non-working students;

-Impact of daily activities on **sleepiness** among working and non-working adolescents;

-Analysis of perception of **knowledge and practices** on prevention of **work injuries**;

- Impact of **information and communication** about work injuries and work related diseases associated to work of young workers.



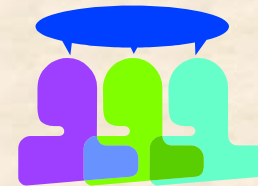


Independent associated factors for work injuries in the present job. São Paulo, 2003.

- Be male (OR= 2.3)
- Reported missed work due to health problems (OR=3.1)
- Reported mental tiredness (OR=2.2)
- Reported high physical isometric loads (OR=2.8)

Adjusted by age

What working students think about their work ?



Social representation about work and study

Focal groups and analysis of free-evocations

High school students from São Paulo, Brazil (n= 208).

-Age bracket: 14 to 22 years old.

Oliveira et al, 2003

Analysis of Evocation (EVOC)
 Inductor word: **WORK AND STUDY** in the evening period
 Mean frequency: 44
 Lower frequency: 17
 Mean order of Evocation: 2.8

	Mean Freq.	M.O.E		Mean Freq.	M.O.E
Tiredness	215	2	Future	66	3,2
Difficulties	75	2	A lot of responsibility	62	3
Good	55	2,7	Stressful	46	3
Necessary Efforts	55	2,6			
	54	2,3			
Essential Responsibilities	42	2,5	Lack of time	34	3,2
Bad	33	2,2	Study interference	33	3
Living in a rush	32	2,5	Lack of Sleep	27	3,1
Study	25	2,3	Learn	26	3
Difficult to conciliate	22	2,6	Wake up early	24	3,1
	20	2,7	Maturity	24	3,5
			Willingness	24	2,9
			Relationship	18	3,6
			Time	17	3

Oliveira et al, 2003

Social representation about working and studying

Contradictions:

Workers represent their work as:

- **Moral values and positive to the psychosocial development:** construction of identity

- **Negative values:** learning difficults, physical and psychological workload, lack of free-time, negative consequences on well-being.

Oliveira et al, 2003

Youth at Work

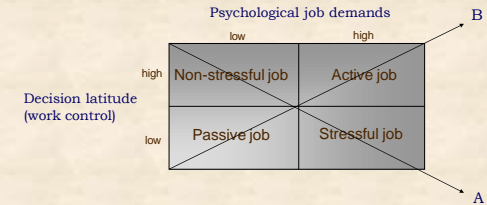
Negative aspects

- Reduced night-time sleep duration compared to non-working students on weekdays and weekends
- High levels of fatigue symptoms
- Bad working conditions are associated with pains located in upper and lower limbs back
- Work-related diseases and work injuries resulting from the activities performed at work by adolescents are quite significant

Fischer et al. (Brazilian adolescents)



Psychological demand/Decision latitude (Karasek, 1979)



A – Risk of psychological strain and physical illness
B – Learning/motivation to develop new behavior patterns

Objective

To evaluate physical and psychological dimensions of adolescent labor (such as job demands, job control, and social support in the work environment), and their relation to reported body pain, work injuries, sleep duration and daily working hours.

Methods

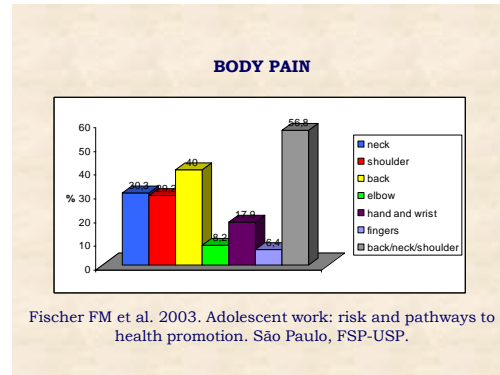
A total of 154 adolescents attending evening classes at a public school in São Paulo, Brazil, answered questionnaires regarding their living and working conditions (Karasek's Job Control Questionnaire, 1998), and their health status. Data collection took place in April and May 2001. Multiple logistic regression analysis was used to determine relations among variables.

Results

Psychological job demands were related to body pain (OR=3.3 (higher risk of work injuries) (OR=3.0) and reduced sleep duration in weekdays (Monday to Thursday) (p=0.01). Lower decision authority in the workplace (p=0.03) and higher job security (p=0.02) were related to longer daily working hours.

Conclusions

It was concluded that besides physical stressors, psychological factors are to be taken into account when studying adolescent working conditions, as they may be associated with negative job conditions and health effects.



Associated factors with body pain

variable	categories	OR _{crude}	IC _{95%} (OR _c)			OR _{adjusted}	IC _{95%} (OR _a)	
Psychological job demands	14-27	1.00	-	-	1.00	-	-	-
	28-31	2.29	1.25	4.19	2.10	1.16	4.00	
	*** 32-46	1.39	0.79	2.42	1.00	0.53	1.79	
Physically tired	A little	1.00	-	-	1.00	-	-	-
	Relatively/extremely	1.68	1.05	2.66	2.00	1.20	3.44	
Work	Don't work	1.00	-	-	1.00	-	-	-
	Worker/unemployed	1.33	0.55	1.74	3.20	1.32	7.60	
sex	Male	1.00	-	-	1.00	-	-	-
	Female	1.00	0.69	1.56	1.00	0.58	1.54	

Hosmer-Lemeshow test: p=0,843
 **, tertile

Child labor and musculoskeletal disorders: the Pelotas (Brazil) epidemiological survey

N= 3,269 children (aged 10-17 years old); Low income area of Pelotas, South of Brazil. Cross-sectional study

The prevalence of pain in the neck, knees, wrist or hands, and upper back **exceeded 15%**.

Workers in manufacturing had a significantly increased risk for musculoskeletal pain (prevalence ratio [PR]=1.31) and for back pain (PR=1.69), while **workers in domestic service** had 17% more musculoskeletal pain and 23% more back pain than non-workers.

Awkward posture (PR=1.15) and heavy physical work (PR=1.07) were associated with musculoskeletal pain, while monotonous work (PR=1.34), awkward posture (PR=1.31), and noise (PR=1.25) were associated with back pain.

Fassa et al, 2005

What working students think about work injuries ?



Resumo de Trabalho de Conclusão de Curso

Roberta Fraga?
 Ana Maria C. Coimbra?
 Fernando Colares?
 Juliana Yehd?
 Lilian E. Torres?
 Lílian C. Ziani?
 Wilson S. Soares?
 Rilda M. Garcia?

Conhecimentos e práticas de adolescentes na prevenção de acidentes de trabalho: estudo qualitativo

Knowledge and practices by adolescents in preventing occupational injuries: a qualitative study

Young workers answered 2 questions:

- In your opinion, why do accidents occur?
- What do you do to prevent work accidents?

Experienced young workers answered: Unexperienced young workers answered:

- | | |
|---|--|
| <ol style="list-style-type: none"> Work injuries occur because the workplace is unsafe Work injuries occur due to lack of training on the job Accidents at work occur due to employee's bad luck Work injuries occur due boss' irresponsibility Work injuries occur through carelessness of the employee Never thought about it | <ol style="list-style-type: none"> Work injuries occur due boss' irresponsibility Work injuries occur through carelessness of the employee Never thought about it |
|---|--|

How working teens spent their time?

We evaluate time spent in daily activities (work, home duties, commuting time, leisure, study, sleep).

Sleep deprivation

- memory lapses
- increased sleepiness
- reduced ability to concentrate on school/work tasks
- low performance at work/ school

Actigraph



Circadian Rhythm, 26(1): 99-113, (2007)
SLEEP AND SLEEPINESS AMONG WORKING AND NON-WORKING HIGH SCHOOL EVENING STUDENTS
 Liliane Reis Teixeira,¹ Arne Lowden,² Samantha Lemos Turte,¹ Roberta Nagai,¹ Claudia Roberta de Castro Moreno,¹ Maria do Rosário Dias de Oliveira Latorre,³ and Frida Marina Fischer¹

Mean and standard deviation of sleep duration of working and non-working students.

Variable	Day of the week	WrkM (G1) Mean (sd)	WrkF (G2) Mean (sd)	NonWrkM (G3) Média (d.p.)	NonWrkF (G4) Média (d.p.)	P*
End of sleep	Semana	7h32min ± 42min	7h54min ± 94min	9h48min ± 68min	9h39min ± 51min	G1≠G3(p=0.03) G1≠G4(p=0.01) G2≠G4(p=0.04)
	Fim-de-semana	8h56min ± 80min	9h10min ± 90min	9h08min ± 45min	10h48min ± 76min	p>0,05
Night sleep duration	Semana	6h47min ± 33min	7h30min ± 94min	8h49min ± 77min	8h57min ± 27min	G1≠G3 (p=0.02) G1≠G4 (p=0.01)
	Fim-de-semana	8h24min ± 65min	8h51min ± 77min	7h28min ± 53min	9h43min ± 39min	G3≠G4 (p=0.01)
Total duration of sleep	Semana	7h45min ± 81min	7h53min ± 93min	9h16min ± 92min	10h25min ± 52min	G1≠G4 (p=0.01) G2≠G4 (p=0.01)
	Fim-de-semana	8h46min ± 85min	9h35min ± 77min	8h09min ± 38min	10h22min ± 70min	G3≠G4 (p=0.03)

p*: descriptive level Tukey test;
 Wrk M: working male; Wrk F: working female.



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Sleepiness and working teens

Circadian Rhythm, 26(1): 99-113, (2007)
SLEEP AND SLEEPINESS AMONG WORKING AND NON-WORKING HIGH SCHOOL EVENING STUDENTS
 Liliane Reis Teixeira,¹ Arne Lowden,² Samantha Lemos Turte,¹ Roberta Nagai,¹ Claudia Roberta de Castro Moreno,¹ Maria do Rosário Dias de Oliveira Latorre,³ and Frida Marina Fischer¹



FIGURE 1. Mean and standard error of the Karolinska Sleepiness Scale, rating done every 4 h by workers and non-workers, high school students, São Paulo, Brazil.

Non-working high school students attending morning classes. São Paulo, 2004.



Working students attending evening classes. São Paulo, 2004



On Going studies (2008-2014)

Aim

To evaluate perception of **trainees and apprentices** on working conditions, including psychological violence, health symptoms and education development **before and after** they entered workforce.

Headquarters of the non-Governmental Organization , São Paulo, Brazil



Students in class, NGO, São Paulo, 2011



According to the Labor Market Observatory of the Ministry of Labor in Brazil (OMTE), 660,689 hired young apprentices were included in the General Register of Employees (employed and unemployed) workers, between 2006 and 2010. (OMTE, 2011)

>The study was carried out in a non-governmental organization (NGO) located in a lower-income neighborhood in the outskirts of São Paulo, Brazil.

>20 apprentices and 20 trainees, in the age bracket of 14-20 years old, agreed to participate in this study.

>Informed consent was obtained from all participants (students and their parents) prior to the beginning of the data collection.

> The following themes were raised: entering into the labor market, working conditions, health symptoms, labor protection of working teens.

Metodology- Study participants

Apprentices and Trainees : characteristics of employment

Characteristics	Apprentices	Trainees
Contract/follow up	Up to 2 years	Up to 2 years
Working time/week	32h	40h
Supervision NGO	8h/week	5h/month
Employment contract	Formal employment including benefits: 13 th salary, 30 days/year vacations, social insurance, food stamps, commuting financial support	Employment with a restricted number of benefits: financial support to commute and buy lunch

Law nº 10.097/2000 - Apprenticeship Law
Law nº 8.069/90, Art. 68: Internship of the educational work

Study participants, apprentices, São Paulo, 2009



Study participants: feedback session, apprentices and trainees, São Paulo, 2010.



- The 40-h workweek plus evening school attendance were identified as harmful to their health and education.
- The following adverse effects were reported to impact time and quality of life:
 - ✓ shortening the length of time to sleep and eat
 - ✓ decreased physical activity
 - ✓ presence of muscle pains
 - ✓ feeling stressed
 - ✓ being late or often missing school

Malaise at work

Teenage workers were exposed a number of times to:

- humiliation
- abuse of power
- psychological constraints
- sexual harassment
- **Most common situations:**
 - jokes of bad taste (co-workers)
 - abuse of power (bosses)

Sociodrama intervention*

- Scenes developed along sessions allowed the identification of teenager's expectations towards the world of work.
- New constraints affecting young workers were reported. Working students identified a number of health factors (nutrition, fatigue and sleep), family and social life, studies, etc, as they face a new reality as apprentices/trainees.
- Work preparation as well as psycho-pedagogical monitoring after entered labor force are essential to identify risks and difficulties at work/off-work, and anticipate effective coping strategies.

Schmidt et al, 2011

High school students before entered workforce with informative booklet - Sociodrama sessions, 2011



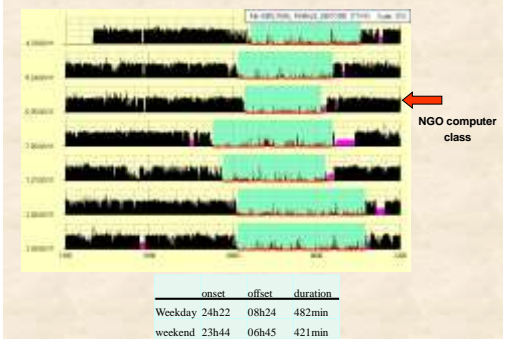
Evaluation of wake- sleep cycle before and after entering work as apprentices or trainees

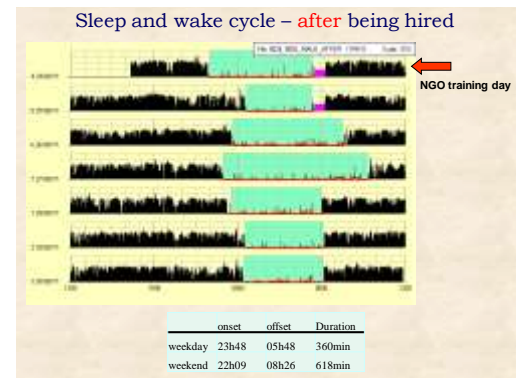
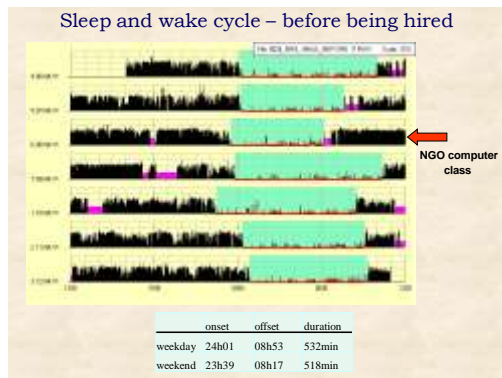
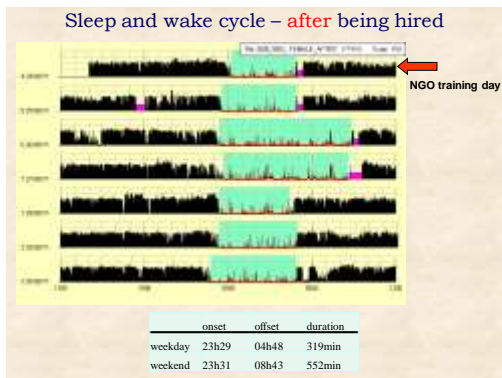
Activity-rest continuous recordings



Ambulatory Monitoring Inc.

Sleep and wake cycle – before being hired





WORK + STUDY:


- The double burden (work + study) affects:
 - sleep duration,
 - sleep patterns,
 - sleepiness behavior along the day,
 - sleep disturbances,
 - reduced time spent in school,
- Reduced time to engage in extracurricular activities,
- Work associated to work injuries, body pains and reduced well-being.

Opinion

Scand J Work Environ Health 2006;32(4):328-330

Sleep deprivation of working adolescents-a hidden work hazard
by Liliane R Teixeira, MPH, Frida M Fischer, PhD, Arne Lowden PhD

This manuscript discusses the sleep deprivation of adolescents and young workers and its impact on their work and learning. Several studies have shown that **working adolescents wakeup earlier, have a shorter nocturnal sleep duration and higher level of sleepiness during wake time during the week than nonworking students do.** These studies indicate that working students may have their learning ability affected by being tired and sleepy. Therefore, on the basis of these results, the authors recommend that educational programs geared to sleep hygiene should be one of the priorities of the curriculum. At the same time, **the work hours of teenagers should be shortened in order to allow them to work and study during daytime and to have enough time at night for leisure and rest.** These recommendations would improve the quality of life of the population that already is or will soon be participating in the job market.
Key Terms: child labor; educational program; sleep hygiene; teenage worker; workhours.



Guidelines for constructing a set of integral health care actions for children and adolescents in work situations aiming to promote, protect, recover and rehabilitate health.

- Set of initiatives recommended by the Ministry of Health, in order to train and provide technical support to the Brazilian Unified Health System (SUS), as an initiative in **prevention and elimination of child labor and protection of adolescent workers in Brazil.**
- **Procedures:**
 - ✓ Identify work occurrence and conditions
 - ✓ Assessment and diagnosis
 - ✓ Referrals
- **Recommendations:**
 - To determine if the work situations is legal or illegal;
 - To consider occupational exposure to different sorts of work stressors that may harm the health of adolescent workers;
 - To register the occupational hazards;
 - To consider psychosocial factors at work as well as risk factors to adolescent's health;
 - To promote actions to remove straightaway children and adolescents from illegal and hazardous work.



Available at: www.cdc.gov/niosh; Publication no. 2003-128.

Recommendations NIOSH Alert for young workers

Young workers

- know about and follow safe work practices;
- ask about training;
- ask about hazards;
- know your rights;
- know the laws;

Recommendations NIOSH Alert for young workers

Employers

- recognize the work hazards;
- supervise young workers;
- provide work training;
- know and comply with the laws ;
- develop an injury and illness prevention program;

Recommendations NIOSH Alert for young workers

Educators

- talk to students about work;
- ensure the safety of school-based work experience programs;
- include worker safety and health in the school curriculum;
- know the laws.

Recommendations NIOSH Alert for young workers

Parents

- take an active role in your child's employment;
- know the laws;
- be aware of young workers' rights;
- share information with other parents.

CONCLUSIONS (1/3)

➤ Labor makes a major contribution to young worker's **financial status and social inclusion**

➤ Labor has a significant impact on the teenagers' **physical and mental health**

➤ Specific public policies on the **double shift** (work and school) should be created. Regulations should particularly **reduce and adapt working time** to these students' life circumstances.

➤ Schools, occupational training institutions, employers and the young workers **must be involved** in the discussion on the interface between labor and human beings, work organization and the conciliation between work, school and personal life.

Fischer et al, 2012

CONCLUSIONS (2/3)

➤ **Training programs** have to be implemented in schools to inform the multiple risks in the working environment and the rights of teen workers.

➤ The worldwide significant number of adolescents entering labor market should require attention by **health and education authorities, as well as policy government** guidelines to protect teen's health, particularly in developing and transition countries.

➤ Young people need **professional recognition and decent work** that favor a good development and formation of a professional identity. It is paramount to maintain a healthy work environment in our society where teens can experience a full physical and cognitive development.

Fischer et al, 2012

CONCLUSIONS (3/3)

All involved should take into consideration that good educational background lays the grounds for **young people's sustainable future health.**

“Thirty-four million young people
having productive and decent
employment build progress”

(ILO, 2009)



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EEs Ensino Fundamental e Médio de Monteiro Lobato, SP
EEs Ensino Fundamental e Médio de Santo Antonio do Pinhal, SP
C.R.E.S.C.E.R: Centro Rotário Educacional Jardim São Luis, São
Paulo, Capital.

Illustrations: Paula Galasso.



Thank you!

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SCHOOL OF PUBLIC HEALTH - USP

References of our studies

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