Online Home ERGO from Home Office Ergonomics

Case Study of Online Ergo Assessment Provision for Employees Working From Home during Covid 19 Pandemic

Introduction

In line with Employer's (ER) statutory duty to ergonomically assess Display Screen Equipment (DSE) workers as laid out in the Health & Safety Authority's 2007 Safety, Health and Welfare at Work (General Applications) Regulations and newly published Guidance on Working from Home (October 2020), a medium sized SME sought to offer virtual/online working from home(WFH) ergonomic assessments on those employees (EEs) who were home based since the start of the Covid 19 pandemic.

MOR, a Leading Chartered Physiotherapist & Consultant Ergonomic Advisor/ Assessor with over 40 years clinical expertise and 20 years on onsite DSE assessment experience successfully tendered for this project.

At the start of the commissioning process a defined equipment list was agreed between the company's H&S Adviser, Facilities Manager & Ergonomic Assessor (MOR) to ensure

1. Provision of appropriate ergonomic home office equipment,
2. Optimal cost benefit
3. Control of the ordering process, so items could be ordered in bulk and dispatched in a timely manner

The online consult aimed to address three issues relating to Working From Home (WFH):

1. Any pre-existing or current /potentially work related musculoskeletal (MSK) issue related to the work set-up.
2. A full ergonomic assessment of the work area to include desk, chair, computer.
3. General Health & Safety issues related to work in a domestic space

EEs were emailed a custom designed self assessment form. This semi-completed returned form became the basis for each online interview. Consults took place over Zoom to allow for visual assessment of the home work environment. The Zoom call was taken on the EE's mobile phone, so that the home work environment could be accurately visually assessed in relation to the self completed form. The only other item required by the EE was to have a tape measure on hand. Each

online consult took some 25-30 minutes to complete due to the individualised nature of each assessment.

Two of the most pertinent measures in workstation ergonomics are:

a. The individual EE's height. Heights in this cohort ranged from 152cm to 190cm and were categorised in the following ergonomic height groupings: Small <165cm, Average 165-180cm, Tall > 180cm

b. Desk or table height. The standard office desk is 72-74cm high.

Individual height and table height being fixed measures, these measurements inform optimal individual seat height, chair armrest height, monitor height and distance, among other variables. Unlike in normal in-person office DSE assessments all measurements are undertaken by the Assessor, in the online setting, the EE was instructed and measured their own seat height, monitor height, etc.

Results

77 EEs underwent this Online WFH Ergo Assessment Process. The semi-filled ergo form was completed concomitantly as the online assessment was in progress, and then returned to the individual EE for their own records. A master sheet of findings and required equipment was sent to the H&SAdvisor and Facilities. All information was saved and shared in appropriate GDPR manner.

Of note, individual height fell into three regularly assigned anthropometric bands, with some 60% of EEs being of average height:

EE Height (cms)	Small < 165	Average 165-180	Tall >180
% of total	24.3%	59.1%	16.6%

Desk surfaces in use in the home included a coffee table of 40cm height, desks of standard height, o Kitchen /dining room tables in the range 74-80cm and breakfast bars of 100-105 cm. In cases where surfaces other than a desk was in use, it was due to the constraint of space, sometimes several adults and children all working/ studying from home or in flat share situations.

Musculoskeletal Issues Arising:

In this cohort of mostly under age 40, healthy EEs, the incidence of MSK issues was small, less than 10%. Only two had sought GP or allied health intervention. At the start of the online consultation, MSK issues were addressed, with advice given in terms of posture, lifestyle WfH. Simple stretches, mobility & strengthening exercises were taught and demonstrated live.

Table 1: Number of Items of Equipment Required Per individual EE

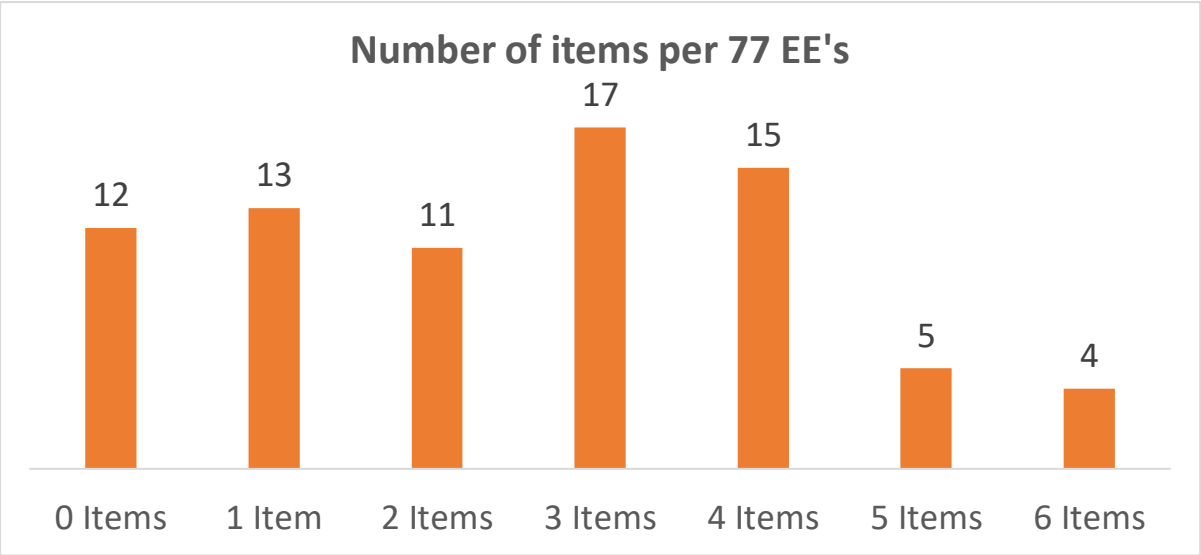
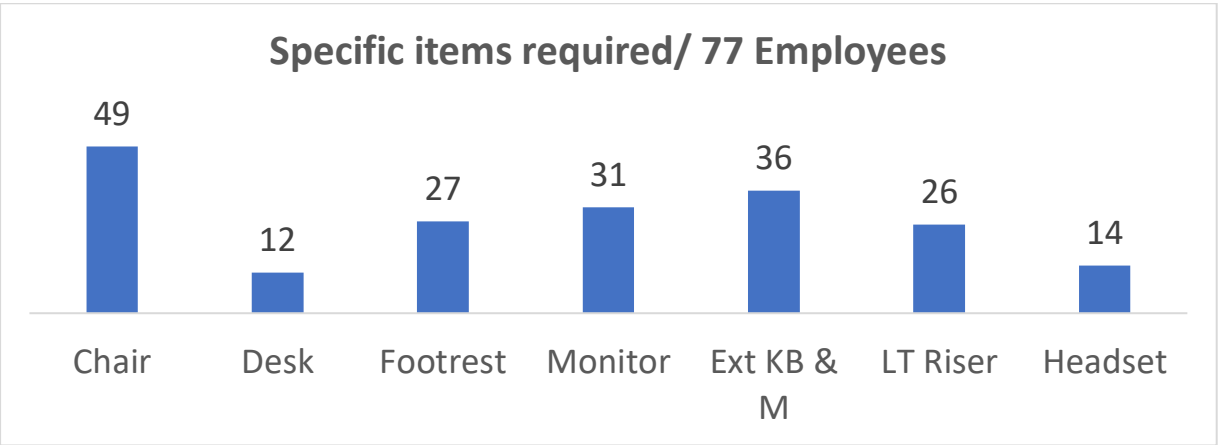


Table 1 demonstrates the variation in number of items of equipment required, from 13 EEs needing no equipment to complete their job while WFH, to 4 EES needing the full battery of equipment, including one senior new hire who required the full battery including a laptop, 2 screens, chair and desk, demonstrating the validity of the individual assessment process. Overall some 195 units of equipment were recommended. The median number of pieces was 2.5.

Table 2: Breakdown of Items Required



*Ext KB & M = external KeyBoard & Mouse, LT Riser = Laptop Riser

In every case the best possible individualised ergonomic solution was sought within space constraints. The total number of units of equipment required for this cohort of 77 EEs was 195, with an average of 2.5 per person.

As would be expected, provision of office type chairs in the WFH environment proved the most common requirement, being 49 EEs, 63% of the workforce and 25.2% of the equipment order.

Lower unit cost items such as Footrests, KeyBoards/ Mice & Laptop Risers were required by some 35-50% of the workforce. The requirement for monitors at 40% of individuals likely reflects the data analytic and numeric nature of the work performed in this organisation. Such work is best performed on large/ multiple screens. The majority of EEs expressed deep relief at the idea of working on monitors, such as they had in the office, noting discomfort of doing this intense computing & data interpretive analysis on small laptop screens.

The number of footrests ordered is perhaps unusually high at 35% of EEs requiring one. Usually footrests are only necessary for individuals of height less than 165cm, working at a standard office desk of 72-74cm high. Thus with 24% of the cohort being <165 cm tall, it would be anticipated this same proportion of footrests would be needed. However, many employees are happily working off kitchen/dining room tables of 76-82cm height. Table top height differential is compensated by placing a footrest on the floor, thus reducing the floor to tabletop distance, and then raising the chair seat pan to a level suitable for the higher work surface. In all cases, EEs were offered a desk, but as can be seen by the low take-up of desks, most EEs preferred to stay as they were, usually for space reasons.

Health & Safety:

During each assessment, time was dedicated to individual EE musculoskeletal health, both work (WR) and non work related (NWR). Only 10% of EEs reported some neck, spinal, low back, shoulder or arm discomfort. This most likely reflects the young age profile, high education levels and general good health of this particular professional cohort.

As both an Ergonomist and Chartered Physiotherapist tips, advice and simple home exercises were given where required and with the EEs permission.

Environmental issues addressed with each EE included:

- provision of natural & task lighting
- awareness/avoidance of glare
- room ventilation
- safety of electrical cabling/use of surge protected extension leads
- safe access & egress/avoidance of trip hazards
- provision of a smoke alarm

- full power down of electrical equipment at end of working day
- simple exercises for general musculoskeletal/ cardiac/ respiratory health & avoidance of eye strain

Cost Benefit Analysis:

Overall as a direct result of this process commenced in December 2020, equipment totalling €16,067 ex VAT was ordered, ensuring that 77 NIBRT EEs are now working safely from home.

Mean spend per employee came in at €208.67 ex VAT, with median spend at €226.30, well below the €450 per person budget originally mooted in-house. Though 4 EEs did require the full battery of equipment, only 2 individuals went over the set per person budget, one being a senior new hire. As noted above, 12 EEs required no spend. Nevertheless, the online process was of value both to ER and EE here as simple correctable issues including desk re-orientation, natural and task lighting, trip hazards were noted and addressed.

Other:

EEs were gracious in allowing visual access to their home. Good engagement between EEs and assessor was noted.

Positive comments included how welcome the advice was, how the home workplace felt more comfortable immediately, even in advance of receipt of prescribed equipment. Reminders to physically move during the working day and simple exercises to reduce eye strain were well received.

This online process fulfilled green credentials, requiring no travel other than an initial onsite meeting to identify the equipment list.

Conclusion:

This case study of online assessment of previously office based employees, now home based due to the Covid 19 pandemic demonstrates the validity, relatively low cost and positive outcome of adapting to the new work environment in 2020 and in the future.

This process has satisfied the Company's statutory duty to ergonomically assess Display Screen Equipment (DSE) workers whether Working from Home full time or ultimately in a Blended Work format, as laid out in the Health & Safety Authority's 2007 Safety, Health and Welfare at Work (General Applications) Regulations and newly published Guidance on Working from Home (October 2020).

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