

Multiple Baseline Article Review

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**ADHERENCE WITH UNIVERSIAL PRECAUTIONS AFTER IMMEDIATE
PERSONALISED PERFORMANCE FEEDBACK**

Molli M. Luke and Mark Alavosius

Journal of Applied Behavior Analysis

2011, 44, 967-971

Purpose, Subject(s), Setting(s)

This research used a multiple baseline across subjects design with “three female health-care staff members (nurse practitioner, physician assistant, and medical assistant)...conducted in the occupational health clinic of a community hospital” (Luke & Alavosius, 2011). Investigators observed correct hand-washing procedures, as prescribed by the Center for Disease Control and Prevention (CDC) via Universal Precautions (UP), with the three participants over 250 hours during a six-month frame of time. Data was observed and collected for the 11 steps to hand washing. The investigators outline the specific criteria being observed related to CDC hand washing procedures. The participants had been given the standard training for hand washing at the beginning of their respective tenure at the community hospital. Data points that were documented occurred in the room of the patient. Patience did require assent for the observers to be in the room.

“Two observers, naive to the purpose of the intervention, functioned as the primary data collectors during the patient-care interactions. Observers collected data, simultaneously but independently during 21%, 42%, and 40%...agreement

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was defined as the same task component (e.g., “wet hands with water”) scored in the same order by each observer” (Luke & Alavosius, 2011).

Method

The multiple baseline across subjects can be defined as the “same intervention...applied to the same or similar behaviors, in the same setting, to different individuals” (Richards, 2019). The study observed three participants hand washing hygiene. The dependent variable observed was the UP hand washing hygiene guideline. Baseline was recorded with no feedback to the participants. The independent variable during intervention phase consisted of providing “individual, private, written and verbal feedback to each participants as soon as possible after observing contact with a patient” (Luke & Alavosius, 2011).

Data was presented in the form of a table and line graph. Luke and Alavosius (2011) provided a table with specific percentages of the 11 steps of the prescribed UP hygiene design for the three participants in baseline, intervention, and maintenance phases. The steps are clearly labeled in the left column of the table. Data was also displayed in a line graph with data points for baseline, intervention, and maintenance phases. The ordinate recorded percentage of target behavior, the abscissa delineated the sessions. The data points were per session mean scores from the aforementioned table. In addition to the percentage of accuracy with the target behavior, the line graph indicated arrows as specific points of the independent variable (feedback) during the intervention trial. Phase change lines were clearly marked with dotted lines. These lines clearly indicate a staggered model indicative of a multiple baseline across subjects design.

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Results and Discussion

Investigators inferred from the baseline data the participants had low adherence to all of the steps of the prescribed UP hygiene target behavior and noted that “participants reported that that they did not know how or when to wash their hands correctly; thus, the low adherence in baseline may have been due to lack of effective training” (Luke & Alavosius, 2011). Results showed a significant increase in target behavior, verifying the predicted independent variable and showing a functional relationship between it and the dependent variable. “Participant 1’s hygiene adherence averaged 44% in baseline, 87% during intervention, and 97% during maintenance. Participant 2’s adherence averaged 57% during baseline, 86% during intervention, and 100% in maintenance. Participant 3’s adherence was 59% in baseline, 95% during intervention, and 96% in maintenance” (Luke & Alavosius, 2011). The researchers included criteria for mastery in this design of five successful sessions without feedback. Post-treatment, participants agreed the intervention and feedback was beneficial and maintained adherence during this 2 month period.

The MBAS design was appropriate for this research model because of the independent subjects with related target behavior. The article does not say how much visible contact the three participants had amongst themselves during the observations to determine issues of covariance. Authors note the limitations for the study include reactivity and may be reduced by observing “via motion detectors at sinks, permanent products (e.g., amount of soap used), and hidden surveillance cameras” (Luke & Alavosius, 2011). The authors made recommendations for future adherence.

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Bibliography

Luke, M.M., & Alavosius, M. (2011). Adherence with Universal Precautions After Immediate, Personalized Performance Feedback. *Journal of Applied Behavior Analysis*, 44 (4), 967-971.

Richards, S. (2019). *Single subject research: applications in educational settings* (Third edition.). Cengage.