"FLASH FOR LIFE": COMMUNITY-BASED PROMPTING FOR SAFETY BELT PROMOTION

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A community-based strategy for promoting safety belt use was field-tested in two adjacent rural communities, one populated by a preponderance of students, faculty, and staff of a major university. The intervention involved the front-seat passenger of a stopped vehicle displaying to the driver of an adjacent, stopped vehicle an 11 × 14 inch flash card that read, "PLEASE BUCKLE UP—I CARE." If the driver buckled up, the "flasher" flipped over the card and displayed the message, "THANK YOU." This flash card was shown to 1,087 unbuckled drivers; 82% of these drivers looked at the flash card and 22% of these complied with the buckle-up request. Compliance was not influenced by the age or gender of the "flasher" (young child vs. college student), nor by the gender of the driver; but significantly more drivers in the university town buckled up following the flash card presentation (25% mean compliance in the college town vs. 14% in the other community). To date, over 2,000 individuals have received a buckle-up flash card for their own use.

DESCRIPTORS: behavioral community psychology, safety belt promotion, prompting, response priming, modeling

The low use of safety belts among U.S. drivers and passengers continues to be a major national problem with tragic ramifications. The vehicle crash is the leading cause of death from age 5 to 34 and causes 2 million disabling injuries per year (Sleet, 1984). More than half of these injuries and fatalities would be prevented if vehicle safety belts were used appropriately (Federal Register, 1984); therefore, failure to wear safety belts is among the highest behavioral risk factors.

The current nationwide campaign to increase safety belt use has relied heavily on education and incentive programs in schools, industries, and throughout entire communities (Geller, 1984b; Tarrants, 1984). So far, incentive-based programs have produced the most prominent "voluntary" increases in safety belt use (e.g., Geller, 1984b; Geller & Bigelow, 1984), especially when the pro-

gram is administered in settings where a contained population of individuals can be "captured" for convenient program promotion, e.g., corporations, schools, and churches (Geller, 1984b). Large-scale applications of rewards to promote safety belt use in communities have been expensive and the outcomes have been somewhat disappointing (e.g., Campbell, Hunter, Gemming, & Stewart, 1984; Geller, 1984b; Rudd & Geller, 1985). In the study reported here, we evaluated a simple prompting technique that could interface readily with large-scale incentive or educational approaches for safety belt promotion and thereby increase the impact of a comprehensive community program.

Geller, Winett, and Everett (1982) reviewed the literature on strategies for prompting environment preservation and concluded that generally four characteristics are necessary for a verbal or written message to increase the occurrence of a desirable behavior, including: (a) the prompt should refer to a specific behavior, (b) the requested behavior should be relatively convenient to emit, (c) the message should be stated in polite language, and (d) the prompt should occur in close proximity to the target behavior (as in point-of-purchase advertising).

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Requests for reprints, "Flash for Life" cards, and instructions should be addressed to E. Scott Geller, Department of Psychology, Virginia Tech, Blacksburg, Virginia 24061.

Figure 1. Front and back of the 11 × 14 inch flash card. Color details in the text.

The prompting strategy studied involved the front-seat vehicle passenger displaying a large flash card that requested the viewer (a passenger of another vehicle) to "buckle up." The four criteria reviewed above for effective prompting were adhered to, in that the specific prompt was given politely in close proximity to the desired behavior, which was convenient to emit. Two other characteristics of this prompting strategy are noteworthy in terms of potential efficacy. The flash card displayer (termed a "flasher") was wearing a safety belt, and if a vehicle driver (the "flashee") buckled up after viewing the flash card, the "flasher" reversed the card to display the message, "Thank You." Thus, the "Flash for Life" intervention included modeling and a consequence.

METHOD

Drivers and Setting

Unbuckled occupants of automobiles in the towns of Blacksburg (population 40,000) and Christiansburg (population 10,500) in southwestern Virginia were targeted. A substantial percentage of the Blacksburg sample (approximately 75%) were students, faculty, and staff of Virginia Polytechnic Institute and State University. Christiansburg is a small rural community approximately 10 miles east of Blacksburg. Approximately 10% of the residents in this community are affiliated with the university.

Procedure

Observation sessions. Observation sessions occurred Monday through Friday from 11:00 a.m. to 12:00 p.m., and from 3:00 p.m. to 4:00 p.m. over seven consecutive weeks. When unbuckled drivers stopped at traffic lights, the "observing" vehicle was driven along the driver's side of a "target" vehicle. With the window down, the front-seat passenger (i.e., the "flasher") of the observing vehicle looked at the driver, and then held up an 11 × 14 inch (27½ × 38 cm) card that read, "PLEASE BUCKLE UP—I CARE." If the driver buckled up, the flasher flipped over the flash card

to the reverse side which read, "THANK YOU." The flashers did not initiate verbal interaction with occupants of the target vehicles, and said as little as possible if a vehicle occupant asked them a question. Only vehicles that were stopped at least 3 seconds after the flash card presentation were included in the data analysis.

Figure 1 illustrates the front and back of the flash card, which was brightly colored with the following scheme: The background was white with a 1.3 cm, yellow border; the safety belt was black with yellow "BUCKLE UP" letters (3 cm high); the rest of the letters on the front of the card were black (also 3 cm high); the safety belt on the back was black with yellow "THANK YOU" letters (3 cm high).

Two observers in the back seat independently recorded on special data sheets the target vehicle's license plate number, the driver's gender and approximate age, the length of time the vehicle was stopped after the flash card presentation, and whether or not the driver buckled up. Occasionally, the driver helped the observers by reading the licence plate number of the target vehicle as it was approached.

Independent variables. Seven different flashers were used: four females (ages 3½, 7, 7, and 22 years) and three males (ages 5, 10, and 23 years). In addition, several other variables that may have influenced the target drivers' reactions to the flash card were noted by the observers. These included the number and age category (adult or child) of occupants in the target vehicle, the weather condition (i.e., sun or rain), whether the windows of the target vehicle were open or closed, and any verbal interaction initiated by the driver.

Observer Reliability

Two trained observers were available for every data recording session, and one observer was designated at the start of each session as the primary observer. For a driver to be considered "flashed" and included in the data analysis, both observers had to agree that: (a) the vehicle was stopped 3 or more seconds after being flashed, (b) a shoulder belt was available for the driver, and (c) the shoul-

Table 1
Summary of "Flash for Life" Results

Flasher (Name & age)	Num- ber of observ.	Number who looked	Number who buckled	Percent- age who looked	Percent- age who buckled
Blacksburg					
Karly—3½	179	154	37	86.0	24.0
David—5	31	21	5	67.7	23.8
Abby—7	68	47	16	69.1	34.0
Carrie—7	64	48	9	75.0	18.8
Dane—10	56	43	6	76.8	14.0
Hollie—22	206	177	43	85.9	24.3
Tim—23	183	147	41	80.3	27.9
Totals	787	637	157	80.9	24.6
Christiansburg					
Tim—22	145	123	19	84.8	15.4
Hollie—23	155	133	16	85.8	12.0
Totals	300	256	35	85.3	13.7

der belt was not worn prior to "flashing." Of the total 893 unbuckled vehicle drivers who were flashed (520 males and 373 females), independent sets of observations were obtained for 98%. On no occasion was an occupant of a target vehicle known to the flasher or the data recorders.

Interobserver reliability was calculated for the gender of the driver, whether the target vehicle was stopped 3 or more seconds after being flashed, whether the driver looked at the flash card, and whether or not the driver buckled the shoulder strap after viewing the flash card and before driving from the intervention site. Agreement percentages were determined by the standard formula: [number of matched observations/number of matched plus unmatched observations] × 100. These agreement percentages were 98.7% for the driver's gender, 100% for vehicle stopped 3 or more seconds after flashing, 100% for looking at the flash card, 100% for not looking at the flash card, 98.7% for buckling up after the flash card presentation, and 99.6% for not complying with the flash card request.

RESULTS

The flash card was shown to a total of 1,087 unbuckled drivers; 893 drivers (or 82.2%) turned

their head and looked at the flash card. Of those drivers who looked at the flash card, 192 (or 21.5%) buckled their shoulder strap before driving their vehicle beyond the intervention site. Including drivers who were flashed, but did not look at the card, this prompting technique influenced 17.7% of the unbuckled drivers of target vehicles to buckle up. Table 1 depicts this intervention data for each of the seven different flashers and in both Blacksburg and Christiansburg.

The percentage of drivers who buckled up after viewing the flash card did not vary consistently as a function of the weather, the age or gender of the flasher or flashee, the number or age of passengers in the target vehicle, or the position of the flashee's window (up or down); but the intervention was significantly more effective in Blacksburg than Christiansburg, $\chi^2(1) = 9.9, p < .01$.

The observers noted numerous occasions on their data sheets when a vehicle occupant other than the driver of a targeted vehicle buckled up as a result of the flash card intervention. Indeed, there were several instances when a vehicle passenger buckled up when the driver did not. However, the impact of the flash card on the nondrivers of vehicles was not recorded systematically and cannot be demonstrated herein.

DISCUSSION

Overall, the "Flash for Life" prompting intervention was as successful as similar community-based prompting interventions that met certain criteria. In other words, community prompting strategies have produced significant behavior change when the prompt specified the desired behavior in non-demanding terms at the exact time and location for the desired behavior, and when the target behavior was relatively convenient to emit (see review by Geller *et al.*, 1982). An additional advantage of the "Flash for Life" was that it involved a personal presentation of the prompt by an individual who was modeling the target behavior. This may actually have been a critical component of the prompting intervention, because in two prior studies when unbuckled drivers leaving a bank ex-

change window received a flier that politely requested them to buckle up, they did not comply (Geller, Johnson, & Pelton, 1982; Johnson & Geller, 1984).

The greater impact of the prompting intervention in Blacksburg than in Christiansburg was expected, given that Blacksburg residents on the whole possess more of the characteristics of individuals most prone to buckle up (e.g., higher education, more white-collar occupations, greater use of subcompact vehicles). In fact, a survey of safety belt use in the downtown areas of Blacksburg and Christiansburg during the same time period as the study revealed 15.9% of 4,308 Blacksburg drivers to be buckled with an available shoulder strap, compared with 9.1% of 4,091 Christiansburg drivers wearing a shoulder belt (Geller, 1984a). Prior research has demonstrated direct relationships between baseline safety belt use and the impact of industry-based incentive and education programs for safety belt promotion (see review by Geller, 1984b); apparently the same relationship holds for prompting (or stimulus control) approaches to encouraging the buckle-up response.

The utility (or social validity) of a behavior change intervention is determined not only by its behavioral or attitudinal impact but also by the acceptability and usability of the intervention. An extremely effective behavior-change technique has minimal large-scale utility if only a few people apply the technique. Therefore, we attempted to evaluate the social validity of the flash card intervention by making flash cards, instructions, and data sheets available to attendants of a variety of safety belt workshops and conferences. The large number of requests for flash cards whenever they were described during a safety belt address by the senior author attests to high acceptability of the "Flash for Life" intervention; however, clear evidence is not available regarding usability. In other words, many people (including news reporters) have expressed enthusiasm for the flash card intervention; and to receive their own flash card, 1,127 individuals have gone to the trouble of writing or calling the first author or signing an address sheet at a conference or workshop. We have received a

number of reports (through letters, phone calls, and face-to-face interaction) indicating that some buckle-up flash cards have received frequent use, but until systematic evidence becomes available from field data tabulations, no valid estimate of flash card usability can be given.

It is noteworthy that the flash card distributed to other potential flashers was refined slightly from that used in the research reported here. In particular, the back of the refined flash card reads "THANK YOU FOR BUCKLING UP" rather than only "THANK YOU." During field data collection, we periodically encountered drivers who were already buckled up and thus we did no flashing on these occasions. In addition, when buckled vehicle occupants were in the vicinity of a flashing episode, they frequently indicated their approval by waving, honking their vehicle horn, or giving the "safety belt salute" (i.e., tugging on their shoulder strap several times). Thus, it became apparent that the "Flash for Life" game should have a way of acknowledging (perhaps rewarding) the safety belt users. Our instructions with the "Flash for Life" card suggest that the flasher thank those who are already buckled up by displaying the back of the flash card. These instructions emphasize that only occupants of *stopped* vehicles should be flashed.

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